



# THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্তৃত্ব দ্বাৰা প্ৰকাশিত

PUBLISHED BY THE AUTHORITY

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নং ৩২৮ দিশপুৰ, শুক্ৰবাৰ, ৬ মে', ২০২২, ১৬ ব'হাগ, ১৯৪৪ (শক)  
No. 328 Dispur, Friday, 6th May, 2022, 16th Vaisakha, 1944 (S. E.)

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GOVERNMENT OF ASSAM  
ORDERS BY THE GOVERNOR  
DEPARTMENT OF HOUSING AND URBAN AFFAIRS

## NOTIFICATION

The 29th March, 2022

**No. UDD(T)159/2022/6.**— In exercise of the powers conferred by the Section 9 and Sub-section (1) of Section 10 of the Assam Town & Country Planning Act, 1959 (as amended) and (Assam Act II of 1960) read with Sub-rule (1) of Rules 3 of the Assam Town & Country Planning (Publication of Master Plan and Zoning Regulations) Rules 1962, the Governor of Assam is pleased to publish the following notice regarding the publication of the Draft Master Plan for Digboi.

### **Notice for publication of the Draft Master Plan for Digboi**

1. It is notified that the Draft Master Plan for Digboi prepared under Section 9 of the Assam Town & Country Planning Act, 1959 (as amended) as described in the schedule below is here by published.
2. Any person or persons affected by the Draft Master Plan may submit their objections or opinions in writing to the Director of Town & Country Planning within two months from the date of publication.
3. The Draft Master Plan with all relevant papers and maps may be inspected free of cost during the office hours at the office of Director, Town & Country Planning, Dispur, Guwahati-6. Deputy Director, Town & Country Planning, Dist Office –Dibrugarh, office of the Chairman, Digboi Municipal Board & Margherita Circle Office. Copy of the Draft Master Plan is available in the office of the Deputy Director, Town & Country Planning, Dist Office – Dibrugarh for sale on payment.

**SCHEDULE:**

**District** : **Tinsukia**  
**Revenue Circle** : **Margherita**  
**Block** : **Margherita**  
**Mouza** : **Makum&Tingrai**  
**Masterplan** : **Digboi**  
**MasterplanArea** : **26.13 Sq.km.**  
**UrbanArea** : **9.33 Sq.km. { DMB (4.03 Sq.km)  
+ Digboi Oil town (5.30 Sq.km.) }**

**Revenue areas included in the Masterplan for Digboi**

<b>TOWN AND VILLAGES</b>	<b>MOUZA</b>	<b>REVENUE CIRCLE</b>	<b>BLOCK</b>
<b>Digboi Town</b>	Makum	Margherita	Margherita
<b>Digboi Oil town</b>	"		
<b>AOC Block 2.Ndpt.</b>	"		
<b>Bapapung No.2</b>	"		
<b>Bogapani T.E 27 Block No.4(part)</b>	Tingrai		
<b>Borbil Gaon No.1</b>	Makum		
<b>Borbil Gaon No.2 (Bogapani)</b>	"		
<b>Borbil Gaon No.3</b>	"		
<b>Gulai Gaon No.1</b>	"		
<b>Gulai Gaon No.2</b>	"		
<b>Gulai AOC Block Gaon</b>	"		

**Description Of Boundaries:**

**NORTH** :- Bogapani T.E.  
**SOUTH** :- Upper Dihing Bonanchall  
**EAST** :- Upper Dihing Bananchall, 3 No. Borgulai  
**WEST** :- Upper Dihing Bananchall, 2 No. Barbill, 3 No. Barbill

**RAJESH PRASAD,**

Principal Secretary to the Government of Assam,  
Department of Housing and Urban Affairs.

**ABBREVIATIONS**

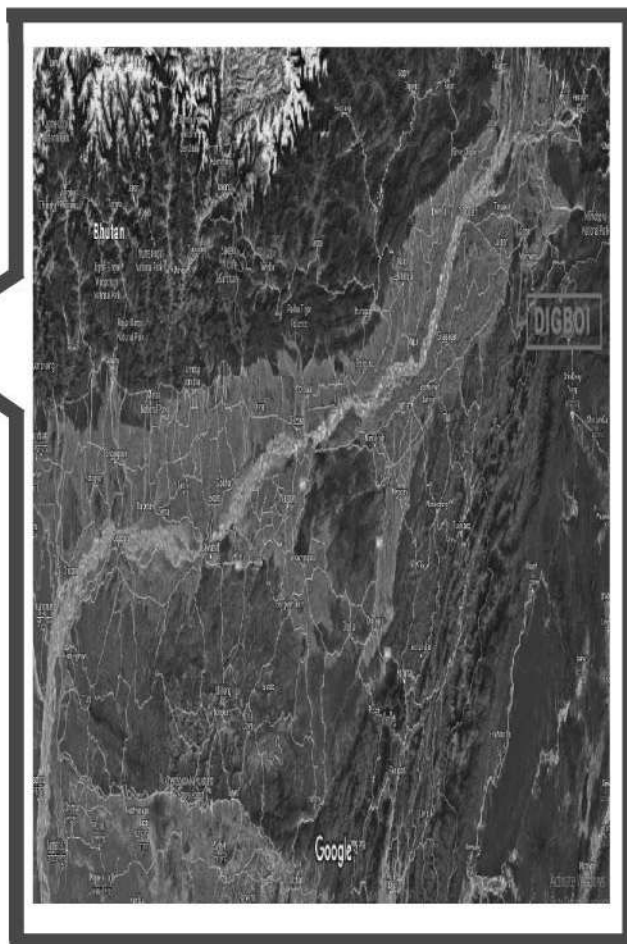
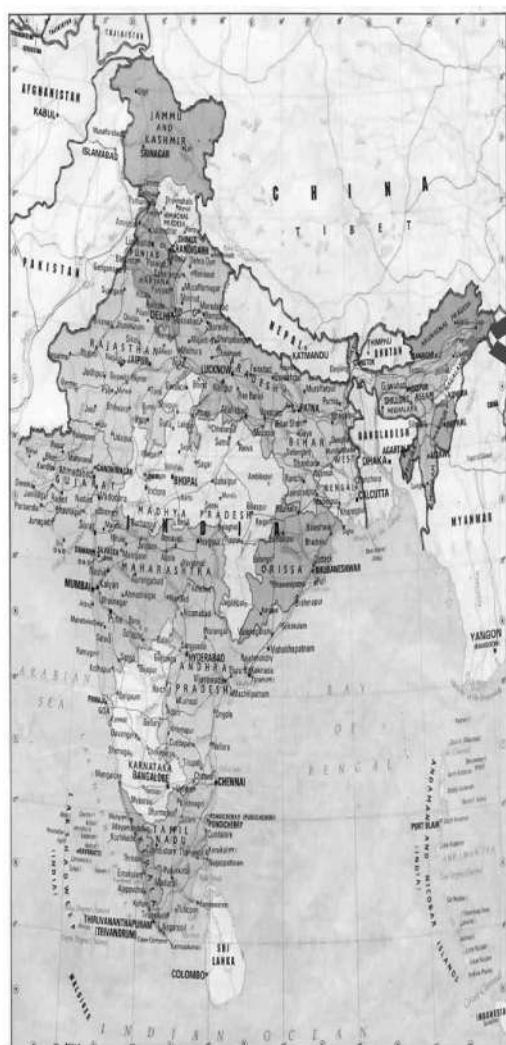
<b>ANUABR</b>	Assam Notified UrbanArea Building Rules – 2014
<b>AUW&amp;SB</b>	Assam Urban Water &Sewerage Board
<b>A.R &amp; T.C</b>	Assam Railways & Trading Company
<b>DMPA</b>	DigboiMasterplanArea
<b>DDMA</b>	District Disaster Management Authority
<b>DPR</b>	Detail Project Report
<b>DDMC</b>	Digboi Disaster Management Cell
<b>PPP</b>	Public Private Partnership
<b>SOP</b>	Standard Operational Procedure
<b>SDO</b>	Sub Divisional Officer
<b>URDPFI</b>	Urban and Regional Development Plans Formulation and Implementation
<b>CPHEEO</b>	Central Public Health and Environmental Engineering Organisation

## **CHAPTER - 1**

### **1. INTRODUCTION TO MASTER PLAN AREA**

#### **1.1 Location**

Digboi is a medium range town of Tinsukia District. The town itself has a natural scenic beauty. Digboi is situated at a distance of 36 km towards north-west from district head – quarter town, Tinsukia, 84 km from Dibrugarh town and 526 km from the state capital Dispur. The new NH-215 & NH-315 is passing through Digboi town. The geographical location of Digboi town is  $27.38^{\circ}$  north latitude and  $95.63^{\circ}$  east longitude and situated above 159 meters (423.12 ft) mean sea level



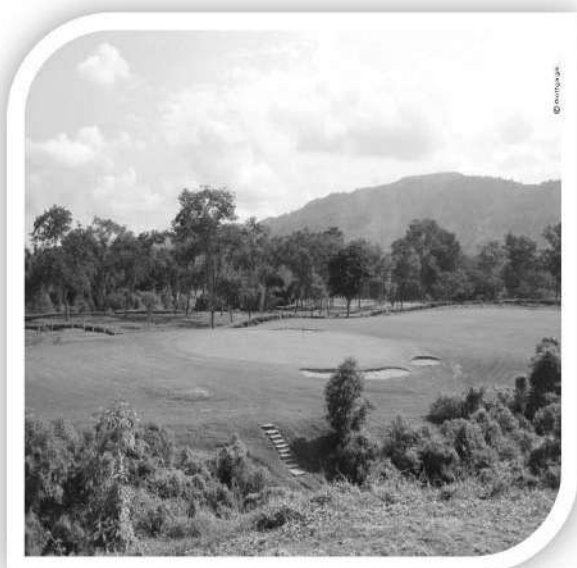


### 1.2 Regional Setting

Digboi region falls in the north-eastern part of India in the Upper Assam Valley. The MasterplanArea is situated on both flat land and hilly areas. The town committee area and ruralarea is mainly situated on flat land. Oil township area is also situated on both flat land and hilly areas. Oil drains flowing between the railway line and the western boundary of the town. This natural stream along with seven other natural streams collects the storm water that is generated in the present town boundary and all of these streams flow from south to north. The surrounding areas of Digboi are mainly covered by reserve forest and tea gardens.

### 1.3 Brief History of the town

It is said that the town Digboi gets its name from the phrase “dig-boy-dig”, which is what the Britishers told the labourers as they dug for crude oil.



History tells us that a historical event was happened in a remote corner of Assam in the midst of the dense malaria infected jungles by a band of intrepid pioneers searching for black gold, i.e. coal. Italian engineers, commissioned by the Assam Railway and Trading Company (AR & TC), to build a railway line from Dibrugarh to Margherita accidentally discovered oil at Digboi, when oil was discovered in remote areas of Digboi, there was no habitation in its immediate neighbourhood. The jungle was dark and swampy. The forest was so thick and the undergrowth was also so dense that sunlight could never reach the ground.

The town history begins in 1867, when a small group of persons from AR&TC found their elephants legs soaked in black mud, that smell somewhat like oil. The path for the growth of oil industry in India began when the oil were found in the dense forest in an around Digboi region. As more and more wells were

drilled and more oil found, the area developed, the population grew and the township of Digboi was set up with schools, markets and well-equipped hospital. The AR & TC started drilling the first oil well in Digboi near their station at Borbil in September 1889. Digboi refinery is known as birthplace of the oil Industry in India. It was commissioned on 11 December 1901. It has the distinction of being Asia's first refinery and one of oldest still in operation. The first lot of kerosene produced from Digboi Refinery appeared in the market on 2<sup>nd</sup> January 1902.



Presently Digboi is a revenue town under Tinsukia district of Assam. Digboi Municipal Board was notified in the year 1960 comprising 4(four) wards. In order to meet the growing demand of the public, the Govt. of Assam on 29<sup>th</sup> April 2003, the existing 4 (four) wards were bifurcated into 8(eight) wards. Again, in the year 2021, the existing 8 wards were bifurcated into 10 wards comprising the same area. As per 2011 census of India, Digboi town has been categorised as class III towns of Assam.



Digboi was originally an industrial town and at present day also it is able to attain the place in the map of Assam as well as in the map of India as an industrial town due to the development of Oil Industry, Assam oil company (AOC) set up a refinery at Digboi, which has raised the importance of this town and this importance has been further strengthened due to the fact that Digboi is the gateway of some places of Arunachal Pradesh. A very prominent landmark of Digboi is the “Stillwell” road built in 1942, connecting to China. Process is going on to reopen this road for transportation. If it is re-opening within a short period of time, then Digboi will be emerging as a very important industrial town not only for Assam but also India as a whole.



Digboi town has been growing industrially as well as with other tertiary services coming up to serve the people of the town as well as its suburbs. In order to check the haphazard growth of the town and also to provide the basic services to the surrounding rural areas, the Town & Country Planning, District office Dibrugarh has prepared a “Masterplan” for Digboi town. At this Juncture it is also essential to create a “Development Authority” to implement the guidelines, implications and plan proposals of the Masterplan.

#### **1.4 Climate**

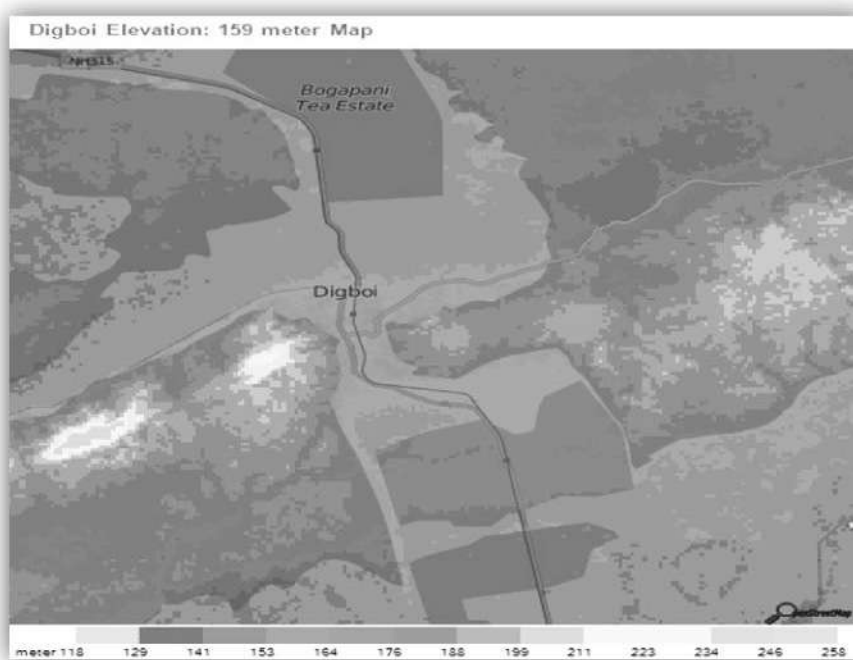
Bio-geographically Digboi area exhibits the properties of both Indian and Malayan sub-regions and represents the North India-Brahmaputra valley bio-geographical province and enjoys a tropical monsoon climate with a hot and wet summer and cool and usually dry winter. In the recent years due to global warming, the hot weather begins from the middle of April to the end of October. The annual minimum and maximum temperature varies between 5.5° Celsius to 38° Celsius. The mean monthly temperature is lowest in December-January and highest in June –July. The minimum and maximum relative humidity of Digboi varies

between 70% to 85%. Since the climate in the region is tropical, the rainfall is heavy as in other parts of the state. The rain associated with monsoon sets in by the middle of May reaches its peaks in July and continues till the end of September the average rainfall is 2231.1 (mm) in 2019 and normal rainfall is 2354.9 (mm) in 2019.

### 1.5 Topography

Topography is the study of the shape and features of the surface of the earth. The topography of an area could refer to the surface shapes and features themselves, or a description in maps. In modern usage topography involves generation of elevation data in digital form. It is often considered to include the graphic representation of the landform on a map by a technique, including contour lines, hypsometric tints and relief shading.

Below is the Elevation map of Digboi, which display range of elevation with different colours. The map also provides idea of topography and contour of Digboi.



### 1.6 Soil Condition

The top soil of Digboi urban area adjacent to refinery is degraded due to extensive emitted chemicals and gases contaminate immediate environment. The major environment impacts due to refining process are the changes in soil stratification, decreased biotic diversity and alteration of structure and functioning of ecosystem. It also leads to air and water pollution, and biodiversity loss. In spite of that, the quality of soil is good in the outskirts of the urban area with sufficient rainfall in the region which is conducive for the growth of vegetation.

### 1.7 Settlement Pattern

As is common in other parts of India, Digboi also experienced the settlement of traders, construction workers and other service providers along with the Bengalis and North-India people in connection with refinery and related works since the early days. This slow and steady growth of settlers together with the decision of many retired employees of the refinery to settle in the town increases the population of the town. Thus at present in Digboi one can see two townships with stark and contrast separated only by some boundary demarcations of Digboi refinery. Refinery township has the spacious bungalows, the sprawling lawns, gracious life style still reminiscent of the old British rule with all modern infrastructures. On the other hand settlement area population without much of urban infrastructures, although entire population of the refinery township depends on the settlement area for their day to day needs as all major markets have developed here.

### 1.8 Rural-Urban-Scenario

Digboi Masterplan covers an area of 26.13 sq.km., out of this urban area consists of 9.33 sq.km. and 16.80 sq.km. occupy by rural area. As per 2011 census urban area population are 34462 persons and rural population are 17590 persons. So, in DMPA, urban population consists of 66.21%. Since Digboi originally developed as an industrial town, that's why the percentage of urban population is generally high in comparison to rural population within Masterplan area.

**TABLE NO :- 1**  
**Urban & Rural Area Population Figure**

<b>Name of the Master plan Area</b>	<b>Category of Area</b>	<b>Area in sq.km</b>	<b>Population in 2011</b>
<b>Digboi Master plan</b>	<b>Urban</b>	9.33	34462
	<b>Rural</b>	16.80	17590
<b>Total</b>		<b>26.13</b>	<b>52052</b>

Source:- Census of India, 2011

### 1.9 Physical Growth and Expansion of the town

Physical growth and expansion of Digboi town mainly taken place due to the Digboi refinery which was established in the year 1901. Digboi masterplan area covering an area of 26.13 Sq. km with two revenue mouza, 10 Town Sheet cadastral map of Digboi municipal area, 14 town sheet cadastral map on Digboi Oil township, 12 cadastral map of villages and with a population of 52052 persons. Digboi refinery is the world's oldest refinery and still in operation. Digboi is now Headquarter of Assam Oil Division of India Oil Corporation Limited. The



growth of the town also takes place due to the existent of tea industry in the region and as well as ancillary activities related to the oil industry growing in the region in the recent years.

For planning purpose Digboi masterplan area has been divided into the following zones:-

**A. The urban zone comprises the following areas:**

1. 10 (ten) wards under Digboi Municipal Board.
2. Digboi oil town
3. Urbanized area adjacent to the town.

**B. The rural zone comprises the following villages and tea gardens.**

1. AOC Block 2.
2. Bapapung No.2
3. Bogapani T.E 27 Block No.4 (part)
4. Borbil Gaon No.1(1<sup>st</sup>& 2<sup>nd</sup> part)
5. Borbil Gaon No.2 (Bogapani) (2<sup>nd</sup> part)
6. Borbil Gaon No.3 (2<sup>nd</sup> part)
7. Gulai AOC Block Gaon
8. Gulai Gaon No.1
9. Gulai Gaon No.2

**1.10 Need of the Masterplan**

The concept of planning has evolved gradually through the changing demand of man and environment but has assumed greater significance and wider connotation with the inception of the present century. The rapid pace of industrial expansion and urbanization has hastened the growth of urban centres. The forces operating behind urban expansion in recent years is becoming more and more difficult to direct or to control. To check the unplanned and haphazard growth of the towns, the principles of planning has been accepted as urgent an imperative.

A town is composed of land, building, people, utilities, services and transportation. It is a large configuration of more or less permanent settlers engaged in diverse economic activities. As the town grows, it attracts larger population; it enlarges the scope of their activities, while the complexity of living distorts the well organized concept of the urban space organization.



Masterplan is a statutory instrument for the provision of long-range vision for the built environment of a community. It guides the appropriate use of lands within a town and its adjacent areas in order to protect the public health and safety and to promote general welfare. Among other issues, the Masterplan can identify suitable locations for commercial, housing and mixed-use development; locations where the city/town should increase density, use redevelopment or intervene otherwise; opportunities to extend or improve open space, recreational areas and civic facilities; strategies for increasing economic development; environmental, historic strategies for solving congestion, improving transit services and also enhance the aesthetic beauty of the town. As a result, the Masterplan has a direct relationship to its citizens, whether we live, work or own a business.

The evils of unplanned growth of our towns have caused enormous problems such as shortage of living accommodation, traffic congestion, lack of sanitation and other community facilities and amenities. The growth of population and the potentiality of Digboi to be an industrially and commercially vibrant town in the near future had led the state Government to realize the importance of proper planned growth of the town and the preparation of the masterplan for this purpose.

In order to translate the suggested developments for Digboi into action, it would be necessary to follow this masterplan which is designed to regulate the future growth and to affect a uniform community. In preparing the Masterplan for Digboi, various surveys such as land-use, socio-economic etc. were carried out to understand the existing scenario of the town and to suggest the line of actions to be adapted.

It is highly desirable at this point that the citizens of Digboi should clearly understand the need for the masterplan because a masterplan is the city/town's long range plan and is important as it affects things we do every day and how we will do then in the future masterplan guide city/towns decisions about important issues like what economic development strategy the city town should take; where certain types of business should the town try to attract; how much parking should be provided in neighbourhood; what improvements should be made to parks and recreations centres; How to protect our natural resources; why certain areas are designed as historic places. So when we wonder why a building is allowed to be located somewhere, why certain streets are one-way streets, why a park has been built in our neighbourhood; a good place to start looking is the masterplan. As such the most desired results could be positive civic interest and greater confidence which will create a conducive environment and our descendents will profit by our forethought or suffer from our negligence. What better work can we achieve than make their path easier, their homes more intimate, their public buildings more attractive and accommodating

**CHAPTER -2****2. DEMOGRAPHY****2.1 Total Population**

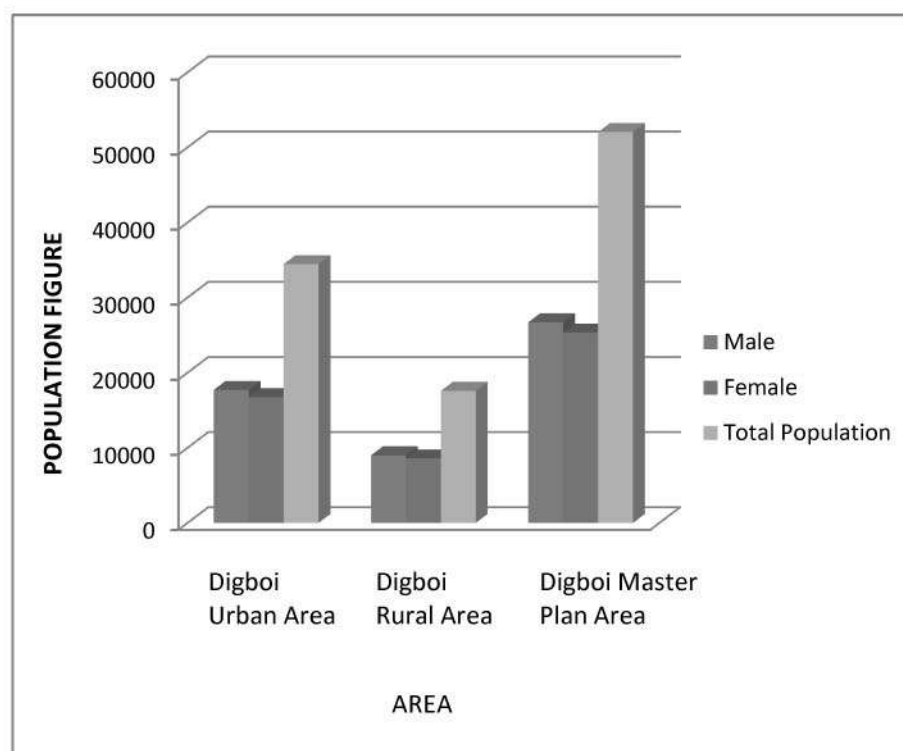
According to census of India 2011, the total population of Digboi masterplanarea is 52052 persons, out of which 21736 persons live within the Digboi Municipal Board, 12726 persons live within the Digboi oil town and 17590 persons live in adjacent ruralarea of the town. The following table shows the population distribution within Digboi masterplanarea.

**TABLE NO - 2**  
**Population Distribution in Digboi masterplanarea**

<b>Name</b>	<b>Total Population</b>	<b>Total Male</b>	<b>Total Female</b>	<b>0-6 years</b>
<b>Ward no.1</b>	1731	894	837	128
<b>Ward no.2</b>	2993	1491	1502	247
<b>Ward no.3 &amp; 4</b>	3818	2009	1809	340
<b>Ward no.5</b>	3235	1602	1633	253
<b>Ward no.6 &amp; 7</b>	4385	2169	2216	329
<b>Ward no.8</b>	2485	1252	1233	180
<b>Ward no.9</b>	1750	865	885	149
<b>Ward no.10</b>	1339	682	657	119
<b>Total Digboi Municipal Board area population</b>	<b>21736</b>	<b>10964</b>	<b>10772</b>	<b>1745</b>
<b>Digboi Oil town</b>	<b>12726</b>	<b>6753</b>	<b>5973</b>	<b>1033</b>
<b>Total UrbanArea Population (A)</b>	<b>34462</b>	<b>17717</b>	<b>16745</b>	<b>2778</b>
<b>AOC Block 2.</b>	678	348	330	57
<b>Borbil Gaon No.1</b>	2329	1169	1160	253
<b>Borbil Gaon No.2</b>	3903	2039	1864	398
<b>Borbil Gaon No.3</b>	3177	1635	1542	436
<b>Bapapung No.2</b>	528	270	258	47
<b>Bogapani T.E.27 Block no.4</b>	877	447	430	131
<b>Gulai No.1</b>	3996	2043	1953	403
<b>Gulai Gaon No.2</b>	1814	907	907	249
<b>Gulai AOC Block Gaon</b>	288	143	145	20
<b>Total RuralArea population(B)</b>	<b>17590</b>	<b>9001</b>	<b>8589</b>	<b>1994</b>
<b>Total MasterplanArea Population (A+B)</b>	<b>52052</b>	<b>26718</b>	<b>25334</b>	<b>4772</b>

Source: Census of India, 2011

**Figure:-1**  
**Male and Female population of Digboi masterplanarea in 2011**



### 2.1.1 Population Growth Rate

The purpose to provide facilities and services in community is to meet the physical, economic and social needs of the people. It is a study and understanding of the growth, distribution, composition and other characteristics of the population and trend are therefore the basic requirements for the wider range planning programmes. The objective of the masterplan for Digboi is to cater to the various needs emerging from these studies in order to meet the aspirations of its residents for whom the plan is prepared.

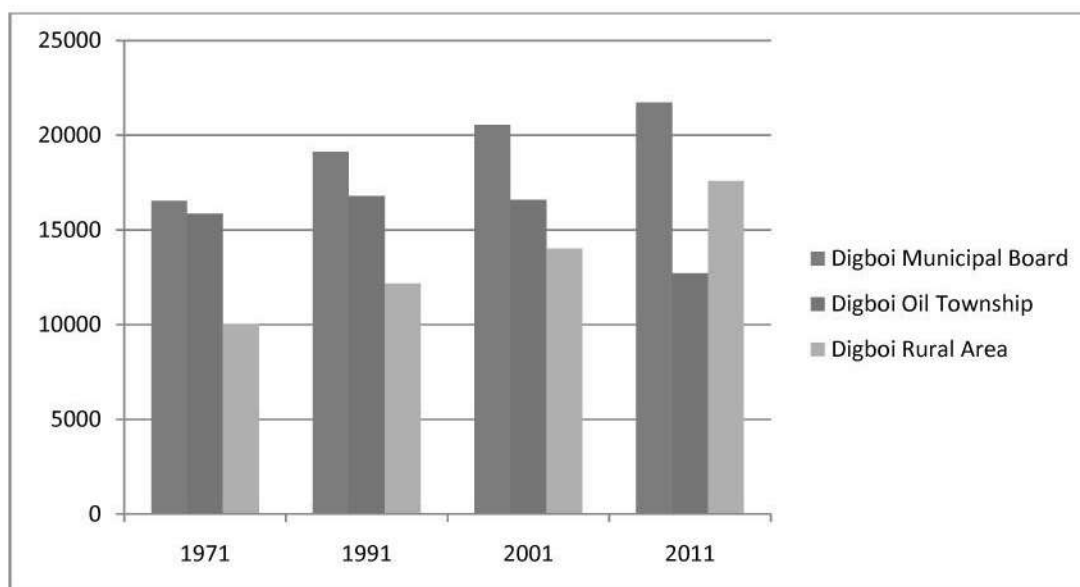
Digboi is revenue/notified town under Tinsukia district. Digboi Municipal Board was notified in the year 1960 comprising of 4(four) wards. Existing 4 wards were bifurcated into 8(eight) wards on 29<sup>th</sup> April 2003. Again, in the year 2021, the existing 8 wards were bifurcated into 10 wards comprising the same area. Digboi town had only 18235 persons in 1961. Digboi town consists of Digboi municipal board area and Digboi oil township area. According to 2011 census of India Digboi municipal board area population is 21736 persons and oil township Population is 12726 persons. As a whole the population of Digboi town in the year 2011 was  $(21736+12726) = 34462$  persons, out of which the male population is 17717 and the female is 16745.

**TABLE NO - 3**

**Growth of Population of Digboi Municipal Board,**  
**Digboi Oil town& Digboi Rural Area**

Year	Digboi Municipal Board		Digboi Oil township		Digboi Rural Area	
	Population	Percentage Increase	Population	Percentage Increase	Population	Percentage Increase
1971	16538	-	15850	-	10056	-
1991	19137	15.71	16796	5.97	12179	21.11
2001	20553	7.40	16590	-1.23	14018	15.09
2011	21736	5.76	12726	-23.29	17590	25.48

**N.B.** There was no census in Assam in the year 1981. Source: Census of India, Assam

**Figure-2**

The decadal growth of population in Digboi masterplan area is shown in the following table.

**TABLE NO - 4**

**Growth of population in Digboi Master plan Area**

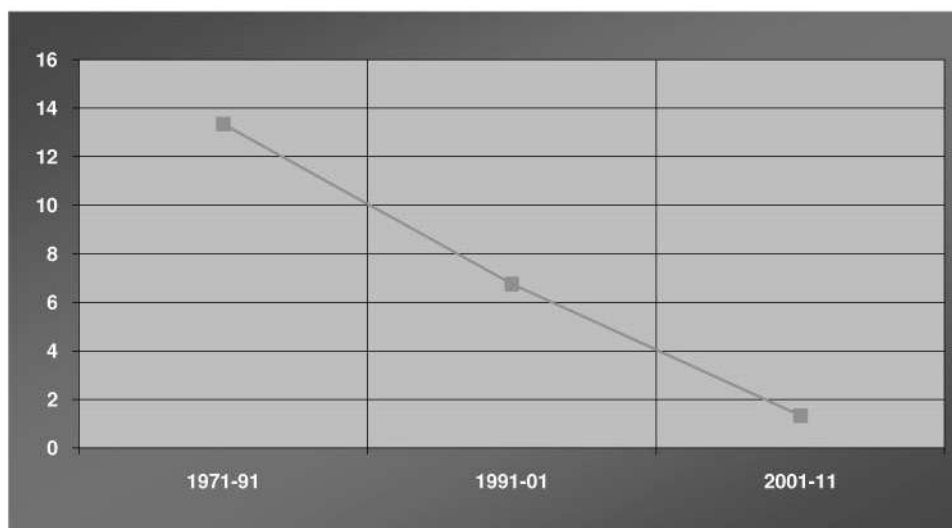
Year	Population	Decadal Increase of Population	Decadal Growth (%)
<b>1971</b>	42444	-	-
<b>1991</b>	48112	5668	13.35
<b>2001</b>	51367	3255	6.76
<b>2011</b>	52052	685	1.32

Source: Census of India, Assam

The decadal Growth of population in Digboi masterplanarea from 2001 to 2011 is 1.32%.

**Figure-3**

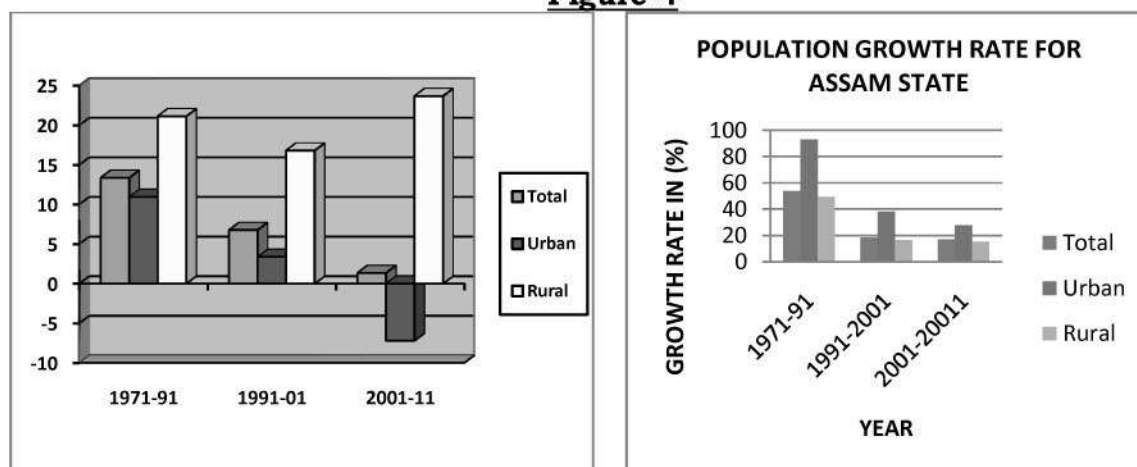
Decadal Growth of Population of DMPA: 1971-2011



**TABLE NO - 5**  
**POPULATION GROWTH RATE OF ASSAM**  
**AND DIGBOI MASTERPLANAREA :-1971—2011**

	POPULATION				GROWTH RATE IN %		
	1971	1991	2001	2011	1971-91	1991-2001	2001-2011
<b>Assam State *</b>							
Total	14.62	22.49	26.66	31.17	53.83	18.54	16.93
Urban	1.29	2.49	3.44	4.39	92.97	38.24	27.61
Rural	13.33	19.93	23.22	26.78	49.42	16.51	15.35
* Population in Millions							
<b>Digboi Masterplan *</b>							
Total	42.44	48.11	51.36	52.05	13.35	6.76	1.32
Urban	32.38	35.93	37.14	34.46	7.76	-8.33	-24.16
Rural	10.06	12.17	14.22	17.59	21.11	15.09	25.48
* Population in thousand							

Source:- Census of India

**Figure-4**

### 2.1.2 Population Density

The net density of population in Digboi urban area in 2011 is 3694 persons per sq.km and in rural area is 1041 person's per sq.km. In the master plan area as a whole the density of population in 2011 is 1992 persons per sq.km.

### 2.2 Sex Ratio

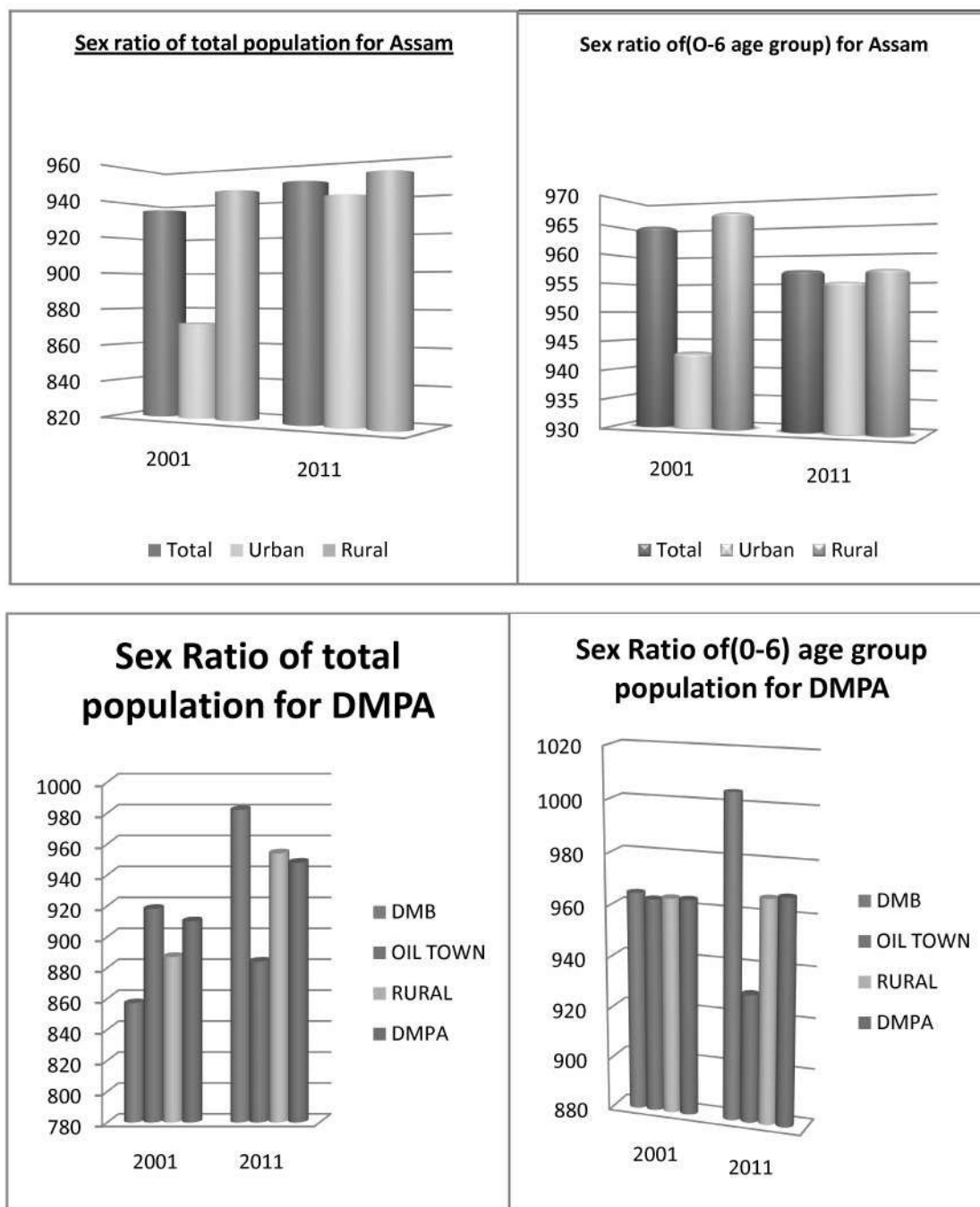
As per 2001 census, in Digboi Municipal Board area the sex ratio was 857, in Digboi oil town 918, in rural area 954 and the Master plan as a whole the sex ratio was 910. According to 2011 census report the sex ratio in Digboi Municipal Board area is 982, in Digboi oil town the ratio is 884, in rural area 954 and in the master plan area ratio is 948. The comparison of sex ratio in 2001 and 2011 in master plan area of Digboi is given below.

**TABLE NO - 6**  
**SEX RATIO**

	SEX RATIO OF TOTAL POPULATION		SEX RATIO OF 0-6 AGE GROUP	
Year	2001	2011	2001	2011
<b>Assam State *</b>				
<b>Total</b>	935	947	965	957
<b>Urban</b>	872	939	943	955
<b>Rural</b>	944	950	967	957
<b>Digboi Masterplan *</b>				
<b>Digboi Municipal Board Area</b>	857	982	965	1005
<b>Digboi Oil town</b>	918	884	963	930
<b>Rural Area</b>	887	954	964	967
<b>Masterplan Area</b>	910	948	964	968

Source: Census of India, 2011



**Figure-5**

### 2.3 Literacy

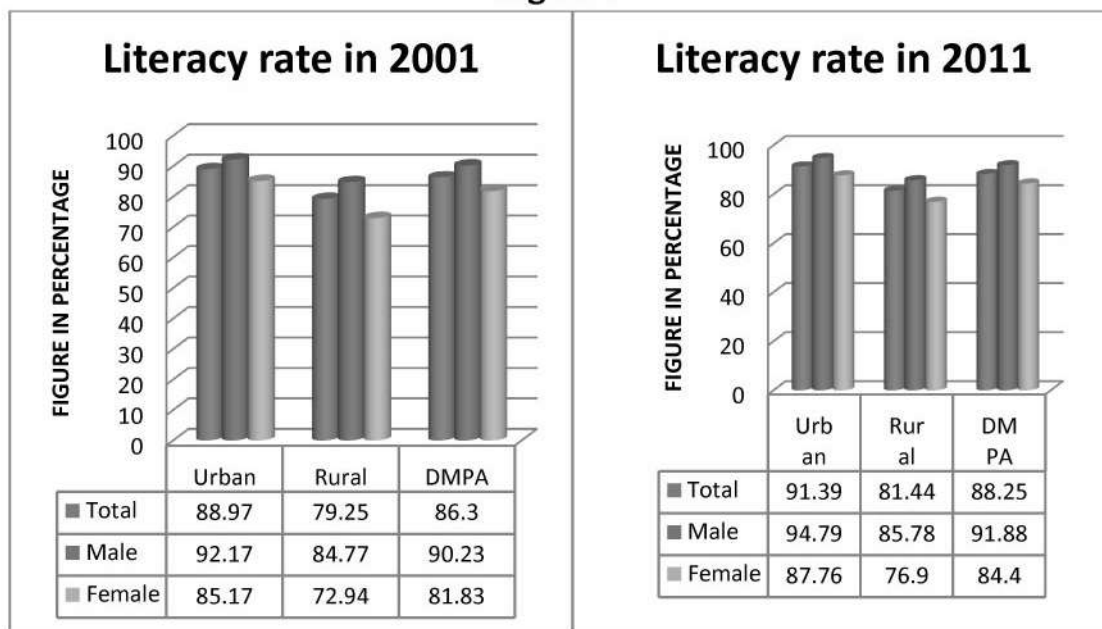
According to 2011 census report the literacy rate of Digboi Municipal Board Area is 92.08% and for Digboi oil town 90.77%, which is higher than the state urban literacy rate of 88.88%. The comparison of absolute literacy rate in 2001 and 2011 for Digboi masterplan area is given below:-

**TABLE NO – 7**  
**LITERACY OF DMPA**

	2001						2011					
	ABSOLUTE			LITERACY RATE (%)			ABSOLUTE			LITERACY RATE (%)		
	Urbanarea	RuralArea	Total (MasterplanArea)	Urbanarea	RuralArea	Total (MasterplanArea)	Urbanarea	RuralArea	Total (MasterplanArea)	Urbanarea	RuralArea	Total (MasterplanArea)
<b>Person</b>	29656	9745	39401	88.97	79.25	86.30	29022	12701	41723	91.39	81.44	88.25
<b>Male</b>	16375	5555	21930	92.17	84.77	90.23	15493	6835	22328	94.79	85.78	91.88
<b>Female</b>	13281	4190	17471	85.17	72.94	81.83	13529	5866	19395	87.76	76.90	84.40

Source: Census of India, Assam

**Figure-6**



## 2.4 Working and Non-Working Population

The total number of workers in Digboi Municipal Board Area has been increased from 6692 persons in 2001 to 7454 persons in 2011. The rate of increase is

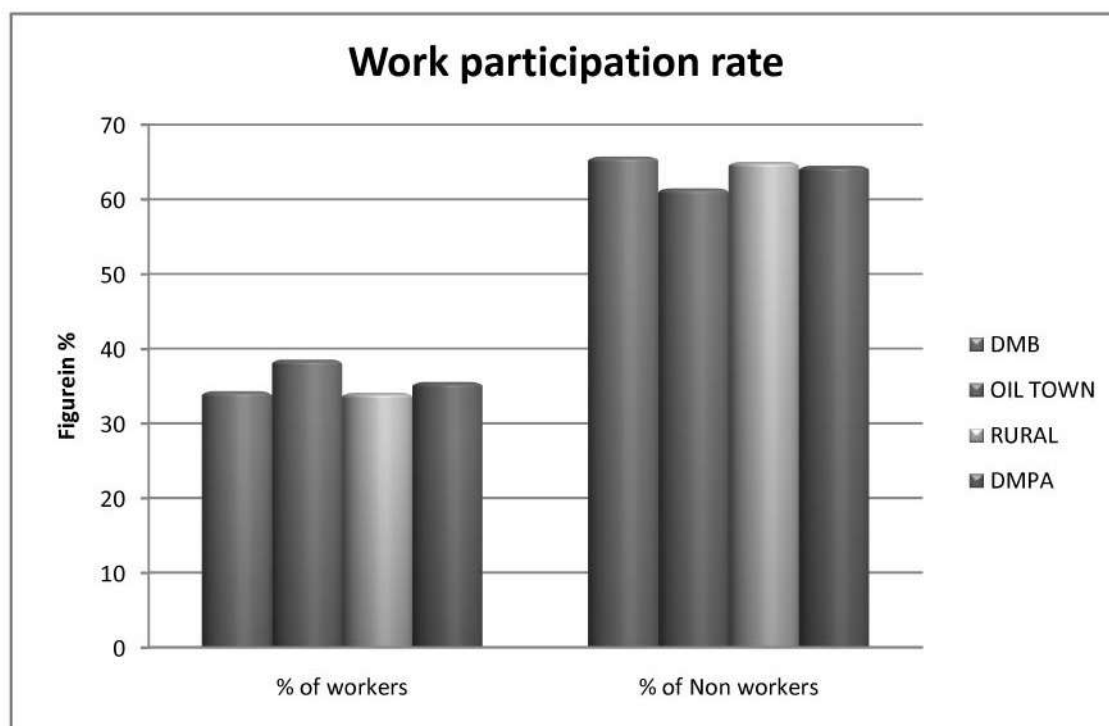
11.39%. Out of 7454 persons the number of male workers are 6337 and the female workers are 1117. In total workers the percentage of male workers are 85.01% and the female workers are 14.99%. The male works participation rate is 10.37%. The workers and non-workers in Digboi masterplan area in 2011 is given below:

**TABLE NO - 8**  
**Workers And Non-Workers In Digboi Masterplan area**

Category	Digboi Municipal Board			Digboi Oil town			Rural Area			Total (Masterplan Area)		
	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female	Persons	Male	Female
<b>Total Workers</b>	7454	6337	1117	4904	4114	790	6139	4931	1208	18497	15382	3115
<b>Main Workers</b>	6417	5611	806	4611	3916	695	5077	4255	822	16105	13782	2323
<b>Marginal Workers</b>	1037	726	311	293	198	95	1062	676	386	2392	1600	792
<b>Non-workers</b>	14282	4627	9655	7822	2639	5183	11451	4070	7381	33555	11336	22219
<b>Works participation Rate (%)</b>	34.29	57.8	10.37	38.53	60.92	13.23	34.9	54.78	14.06	35.53	57.57	12.29
<b>Proportion of Non - workers (%)</b>	65.71	42.2	89.63	61.47	39.08	86.77	65.1	45.22	85.94	64.47	42.43	87.71

Source: Census of India, Assam

**Figure-7**



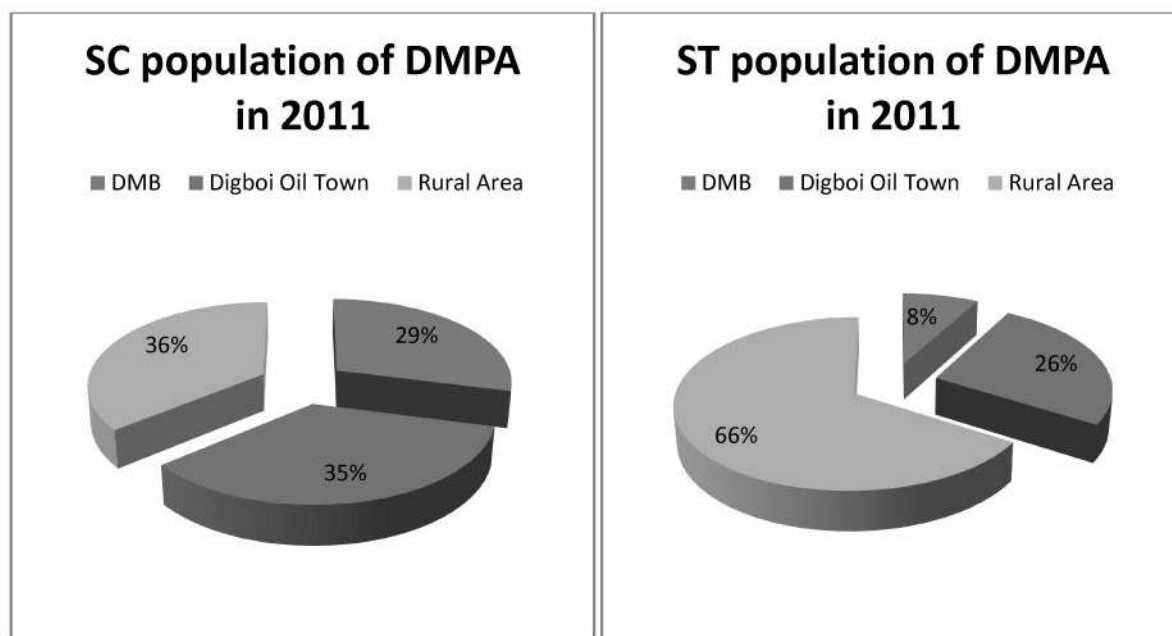
## 2.5 SC-ST Population

In Digboi Municipal Board Area, as per 2011 census report there are 694 Schedule Caste (SC), out of which the number of male's are 367 and female are 327. The Schedule Tribe (S.T) population are only 125, out of which males are 58 and the numbers of females are 67. The SC and ST population for the whole MasterplanArea of Digboi as per 2011 census are given in the following Table:

**TABLE NO - 9**  
**SC-ST Population of Digboi MasterplanArea**

Area	SC			ST		
	Person's	Male	Female	Person's	Male	Female
Digboi(MB) ward no.1	24	14	10	41	19	22
Digboi(MB) ward no.2	88	39	49	11	6	5
Digboi(MB) ward no.3 & 4	339	181	158	15	7	8
Digboi(MB) ward no.5	22	13	9	4	2	2
Digboi(MB) ward no.6 & 7	73	36	37	10	4	6
Digboi(MB) ward no.8	28	12	16	14	5	9
Digboi(MB) ward no.9	89	53	36	6	4	2
Digboi(MB) ward no.10	31	19	12	24	11	13
<b>Sub- Total Digboi MB</b>	<b>694</b>	<b>367</b>	<b>327</b>	<b>125</b>	<b>58</b>	<b>67</b>
Digboi Oil town	<b>856</b>	<b>413</b>	<b>443</b>	<b>421</b>	<b>216</b>	<b>205</b>
Bogapani T.E.27 Block no.4	37	14	23	8	4	4
Gulai Gaon No.1	369	203	166	196	93	103
Gulai Gaon No.2	5	2	3	13	7	6
AOC Block 2 Ndpt.	16	10	6	15	9	6
Bapapung No.2	14	5	9	14	6	8
Borbil Gaon No.1	162	79	83	112	50	62
Borbil Gaon No.2(Bogapani)	156	76	80	215	113	102
Borbil Gaon No.3	99	56	43	487	249	238
Gulai AOC Block Gaon	6	2	4	13	7	6
<b>Sub- Total RuralArea</b>	<b>864</b>	<b>447</b>	<b>417</b>	<b>1073</b>	<b>538</b>	<b>535</b>
<b>Grand Total (MASTERPLANAREA)</b>	<b>2414</b>	<b>1227</b>	<b>1187</b>	<b>1619</b>	<b>812</b>	<b>807</b>

Source: Census of India, Assam

**Figure-8**

## 2.6 House Hold Density and Size

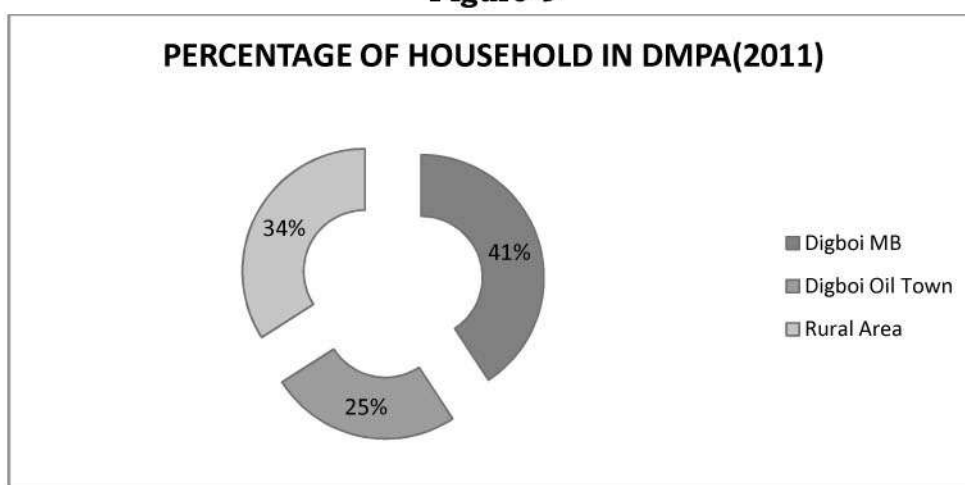
According to 2011 census report, there are 4643 number of household in Digboi Municipal Board are, 2865 number of household in Digboi oil town and 3877 number of household in ruralarea of masterplan. In masterplanarea of Digboi as whole the number of household is 11385. The total number of population in Digboi masterplanarea as per 2011 census is 52052 persons. As such the household size in masterplanarea are 4.57 person's per household. Since the Digboi masterplanarea is 26.13 sq.km., so the site residential household density are 31.91H/Hs per Hectare. The number of household in 2011 for Digboi masterplanarea is given below.

**TABLE NO - 10**  
**NO. OF HOUSEHOLD IN DMPA IN 2011**

Area	No. of Household
Digboi(MB) ward no.1	381
Digboi(MB) ward no.2	634
Digboi(MB) ward no.3 & 4	778
Digboi(MB) ward no.5	740
Digboi(MB) ward no.6 & 7	959
Digboi(MB) ward no.8	512
Digboi(MB) ward no.9	352
Digboi(MB) ward no.10	287
<b>Sub- Total Digboi MB</b>	<b>4643</b>
Digboi Oil town	<b>2865</b>
<b>Sub- Total Digboi UrbanArea</b>	<b>7508</b>
Bogapani T.E.27 Block no.4	180
Gulai Gaon No.1	358
Gulai Gaon No.2	896
AOC Block 2 Ndpt.	165
Bapapung No.2	105
Borbil Gaon No.1	549
Borbil Gaon No.2(Bogapani)	696
Borbil Gaon No.3	875
Gulai AOC Block Gaon	53
<b>Sub- Total RuralArea</b>	<b>3877</b>
<b>Grand Total(MASTERPLANAREA)</b>	<b>11385</b>

Source: Census of India, Assam

**Figure-9**





## 2.7 Population Projection

Population projection is a forecasting tool that helps to estimate the changes in population size and demographic structure. It is mandatory for the Govt. Policy makers and planners of Assam, in order to determine the future demand for basic human needs such as food, water, education, energy and services and to forecast future demographic characteristics.

The main objective is to provide or undertake activities aimed at achieving population stabilization, sustainable economic growth, social development and environmental protection by 2041.

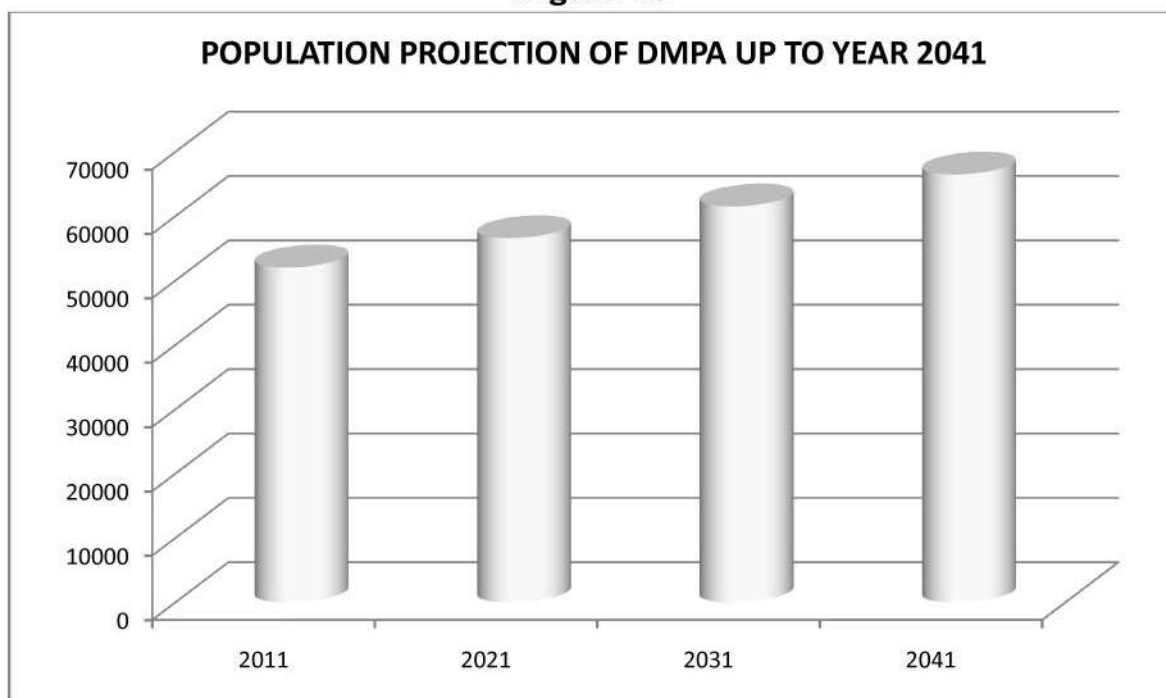
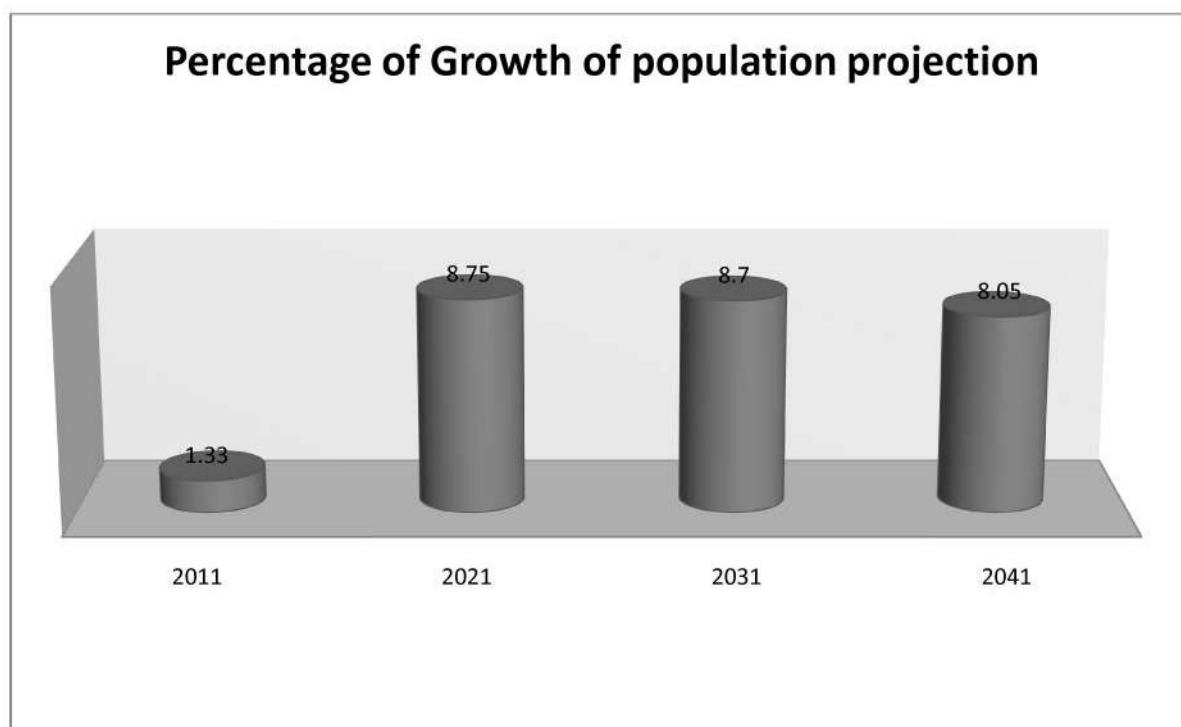
Population projection is a scientific attempt to keep into the future population scenario, conditioned by making certain assumptions, using data to the past available at that point of time. Assumption's used and their probability of adhering in future forms a critical input in this mathematical effort. Predicting the future course of human fertility and mortality is not easy, especially when looking beyond much further in time. Medical and health intervention strategies, food production and its equitable availability, climatic variability, socio-cultural setting, economic condition and a host of other factors influence population dynamics, making it a somewhat unpredictable exercise. Therefore, much caution must be exercised when either making or using the population projection and the context of various conditions imposed, should not be lost sight of on the basis of past behaviour and the likely future scenario assumed.

The final population projections of Digboi masterplanarea have thus been arrived at with the entire base population of 1971 accounted for as the natural population, by adding to the natural population the increase due to the natural growth plus the increase due to emigrational flow of trade and commerce including natural increase of migrants. The following table shows the population projection up to 2041 for Digboi masterplanarea.

**TABLE NO - 11**  
**POPULATION PROJECTION OF DIGBOI MASTER PLAN AREA 1991-2041**

Year	Masterplan Area Population	% of increase
1991	48112	-
2001	51367	6.76
2011	52052	1.33
2021	56606	8.75
2031	61533	8.70
2041	66486	8.05

Source:-Calculated by T&CP, Dibrugarh

**Figure-10****Percentage of Growth of population projection**

**Source:** Digboi masterplan area population of 1991, 2001 and 2011 are from Census of India, Assam and 2021, 2031 and 2041 population figures estimated by Town & Country Planning, Dibrugarh.

### **CHAPTER -3**

#### **3. ECONOMIC BASE AND EMPLOYMENT**

##### **3.1 Formal Sector**

Sector which encompasses all jobs with normal hours and regular wages and are recognized as income sources on which taxes must be paid are known as formal sector. In local terms, organised sector or formal sector in India refers to licensed organisations, that is, those who are registered. Only 6 (six) per cent of India's working population is part of the formal sector the productivity in formal sector is high in comparison to informal sector and also offers higher wages to its employees.

Digboi is known as oil town of India Digboi Refinery, is India's oldest operating refineries in the world. The historic Digboi Refinery has been termed as the "Gangotri" of the Indian Hydrocarbon sector. Today with its vastly modernised operations and facilities, manufacturing major petroleum products and a wide range of specialty products. The marketing network has also been modernized and strengthened and today it is proud that the charging Red Rhino had made its presence felt in other states like West Bengal, Odisha, Bihar, Haryana and Rajasthan. Presently Assam Oil Division prides in having some flagship CSR projects namely IOCL (AOD) Hospital, Assam Oil School of Nursing and many other regular socially committed initiatives. Two more major units will under commission – these are the Solvent De waxing Unit (SDU) and Hydrotreater Unit (HDT). On commissioning of these two units the refinery would be in a position to produce a larger quantity of wax through the SDU and also produce environmentally friendly "green" fuels such as ultra-low sulphur diesel. Besides enabling the refinery to produce Aviation Turbine Fuel (ATF), the hydrotreater unit will also enable the refinery to phase out the use of toxic sulphur dioxide for refining kerosene.

In Digboi there is a vast scope for establishing crude oil related ancillary industries, as such this plan asked the Govt. for creation of a conducive atmosphere for optimum use of natural resources as well as by products of oil industry by the public sector, private sector and public-private partnership mode to build up a sound economic and industrial base in the town.

##### **3.2 Informal Sector**

The informal sector is that part of an economy which is neither taxed nor monitored by any form of government. Activities of the informal economy are not included in the GNP. Although the informal sector makes up a significant portion of the economies in poor state like Assam as well as Digboi region, the informal

sector of Digboi region provides critical economic opportunities for the poor and has been expanding rapidly since the 1990s. The informal sector is largely characterized by several qualities such as Easy Entry, meaning anyone who wishes to join the sector can find some sort of work which will result in cash earnings, a small scale of operations and skills gained outside of a formal education. Most workers in the informal sector, even those are self-employed or wage workers, do not have access to secure work, benefits, welfare protection or representation. The most prevalent types of work in the informal economy are home based workers and street-vendors which are most common in DMPA. Home based workers are more numerous while street-vendors are most visible. Combined the two field makes-up about almost 8% of the work force in DMPA.

Digboi is bounded by Dihing Forest reserve. Although the region is rich in forest resources these have not been exploited fully. There is a good scope for setting up of various wood based cottage industries like safety matches, tea chests, furniture and pre-fabricated housing units etc.

The industrial development targets as proposed above can be achieved through private sector & Governmental agencies by providing suitable industrial land with necessary infrastructure like roads, uninterrupted power, water and drainage and subsidy on power tariff, financial assistances in the form of soft loan etc. The present concept of public –private partnership (PPP) can also be adapted for faster and smooth development of industries.

Digboi town is the nerve centre of business & service of that area. People of nearby areas use to come here to sell their produce and to buy necessary goods for their domestic consumption. There are two main markets in Digboi, one is Digboi Tiniali market and the other is Refinery market situated at the centre of Digboi town. In Digboi town there are also vegetable markets at the junction point which not only fulfil the demand for Digboi and its suburbs but also supply the essential commodities to the people of border areas of Arunachal Pradesh. These markets have played an important role in the economic expansion of Digboi town.

### **3.3 Occupational Pattern**

Occupational structure depicts the characteristics of employment for livelihood of the people living in a particular planning area. The engagement of people in agriculture, trade, commerce, industry and white-collar jobs etc. is known as the occupation and employment character. In the year 2001, in Digboi urban area 32.2% population and in rural area 28.89% population engaged in working. The percentage of working population increased to 35.86% for urban area and 34.90% for rural area in the year 2011. In the year 2011, in Digboi master plan area 35.53% of population out of total population engaged in working. Since Digboi is known as industrial town in the map of India due to the oil refinery and it's also reflected in the occupational pattern of urban area where

almost 39% of the population get their livelihood from secondary sector, i.e. from industrial base. Due to the existence of oil industry in the region, many small types ancillary industry is growing up in the region and people engaged themselves in those industries also.

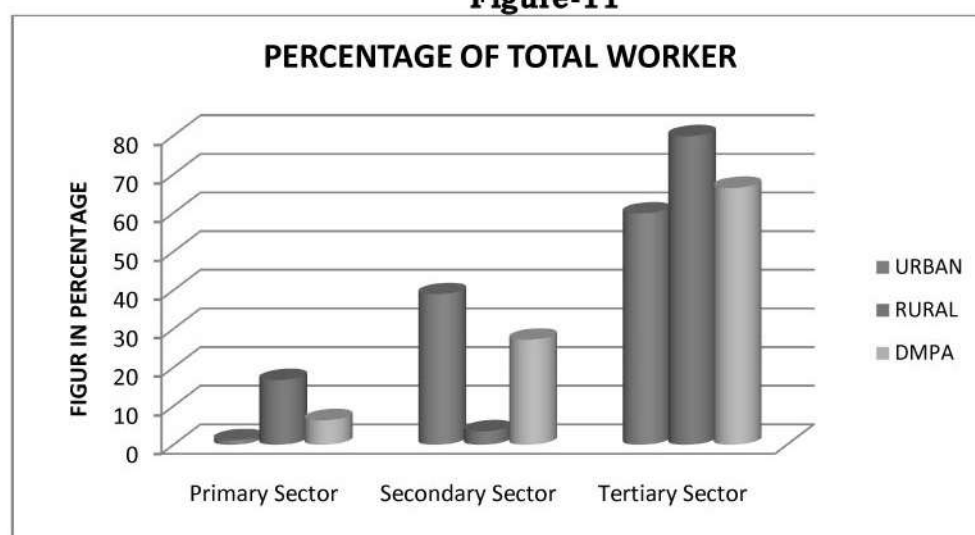
The occupational distribution of population in Digboi masterplanarea for the year 2011 is shown in the following table:-

**TABLE NO - 12**  
**Occupational Distribution of population in DMPA**

Sl. no.	Category	Urbanarea		Ruralarea		Digboi masterplanarea	
		No. of workers	% of total workers	No. of workers	% of total workers	No. of workers	% of total workers
1	Primary Sector	144	1.16	1025	16.70	1169	6.32
2	Secondary Sector	4814	38.96	212	3.45	5026	27.17
3	Tertiary Sector	7400	59.88	4902	79.85	12302	66.51
	TOTAL	12358	100.00	6139	100.00	18497	100.00

Source: Census of India, Assam

**Figure-11**



The above table reveals that the number of people engaged in primary sector is higher in ruralarea as comparison to the urbanarea which is a normal phenomenon in India. The engagement of people in tertiary sector is also higher in

rural area than in urban area due to the fact that in these so called revenue villages adjacent to the town, urbanization trend is growing in these present days. Only in case of secondary sector the rate of engagement of people is higher in urban area as comparison to rural due to oil township area.

Digboi is place of scenic beauty of nature with pleasant weather and British architectural town attracts tourist to visit this place and as a result tourist sector. Expansion of micro, cottage and service industry in the town and as well as in the out skirts of the town also creates employment opportunities to many people. In view of the above, the question of livelihood can be separated on the following heads as mentioned below:-

- (a) Engagement in agricultural activities.
- (b) Engagement in industrial activities including micro and household industries.
- (c) Engagement in trade and commerce.
- (d) Serving as Govt. employee & private employee.



## **CHAPTER- 4**

### **4. HOUSING AND SHELTER**

#### **4.1 Housing Scenario**

Housing is the basic need of the civilized living. Despite various efforts to solve the housing problem with various policies, there is a huge gap between the supply and the demand for the housing in Assam in general and Digboi town in particular. A section of population in Digboi either have no place to live in or living under highly unhygienic, inhuman condition and deprivations. Lack of privacy, absence of minimum basic amenities, use of substandard building materials and unhygienic surroundings dominates the scene of settlements. In Digboi, while the housing problem in the ruralareas, by and large is qualitative in nature and the problem in the urbanareas is largely quantitative. The uncontrolled growth of population in urbanareas due to migration and other factors have created a high magnitude of housing and infrastructure problem. Due to migration of rural population to the town, available vacant spaces in the urbanareas are slowly being converted to unplanned, unhygienic built-uparea. Moreover, cost of land in the urbanarea is also increasing. People in the low and middle income group even find it difficult to acquire the land at the present prevailing cost.

The housing pattern of Assam, including Digboi region have living habits of such a kind that is different from other states and region of the country. There is a general feeling in Digboi region that the basic problem is up gradation of existing units and there is very little need to be done to provide a roof for the utterly shelter less population as the category of such household is very negligible in the region.

An average household size in DMPA has 4.57. The household size being higher in Urbanarea (4.59 members) as compared to ruralareas (4.53 members). The household size in Digboi oil town is still lower at 4.44 members as compared to Municipal Boardarea which is 4.68 members per household.

It is true that development of our country is dependent on the physical and mental health of the people. People who sleep on streets or who live in unhygienic houses cannot fully develop emotionally, intellectually, economically, culturally or as a family. In fact, inadequate and insecure shelter can lead to social and political instability which eventually hampers economic development of our country.

To address this problem, Government of India introduced a new Housing scheme in 2014 namely Pradhan Mantri Awas Yojana (housing for all by 2022). If this scheme does works it would at least help to reduce India's major contribution with one of the highest homeless populations in the world. Under

the PMAY, the main proposal was to construct 20 million homes for those people belonging to the Low Income families and Economically Weaker Sections in the identified urban and semi – urban areas by 2022. Accordingly, Digboi Municipal Board is also working to provide houses to the poor as per guideline.

#### 4.2 Housing Supply Mechanism

Housing supply is the main role of the State Government to improve living condition to the inhabitants either by directly providing houses or by financial assistance. The Government has adopted different policies to solve the housing problems especially for poor and low income group. However, housing supply must address all social groups in the State including housing in Urban areas, semi-urban areas and rural areas. In the recent years private building's and developer's come forward to solve the problems of housing in Urban areas of the State by constructing flat. However, such practices have not been seen in Digboi town. In the rural areas of masterplan a few house has been constructed under centrally sponsored housing scheme. The plan recommends that State Housing Board or any other Govt. agency should come forward to build housing colonies at Digboi for all sections of people of the state considering its unique scenic beauty.

#### 4.3 Housing Condition, Type of Structure etc.

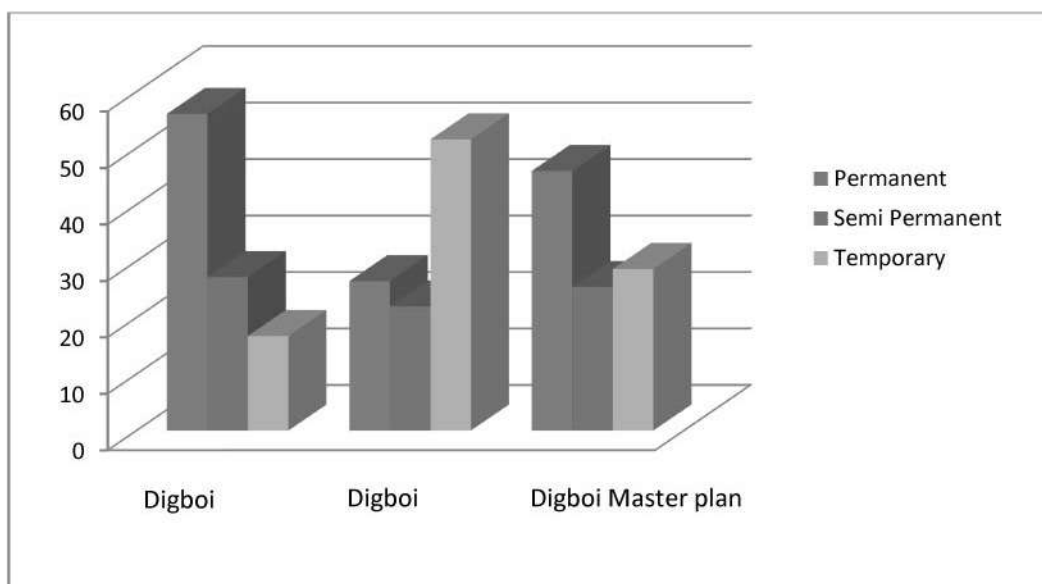
The following table's shows the number and percentage distribution of population and household in respect of different living condition such as structure of house, source of lighting source of drinking water, type of fuel used for Cooking, Banking and Specified assets, Drainage connectivity and availability of kitchen.

**TABLE NO - 13**  
**HOUSING CONDITION, TYPE OF STRUCTURE**

Housing Condition	Digboi Urban Area		Digboi Rural Area		Digboi Masterplan Area	
	No. of houses	Percentage	No. of houses	Percentage	No. of houses	Percentage
<b>Permanent</b>	4209	56.06%	1025	26.46%	5234	45.97%
<b>Semi-Permanent</b>	2041	27.19%	853	21.99%	2894	25.43%
<b>Temporary</b>	1258	16.75%	1999	51.55%	3257	28.60%
<b>Total</b>	7508	100.00%	3877	100.00%	11385	100.00%

Source: Census of India, 2011

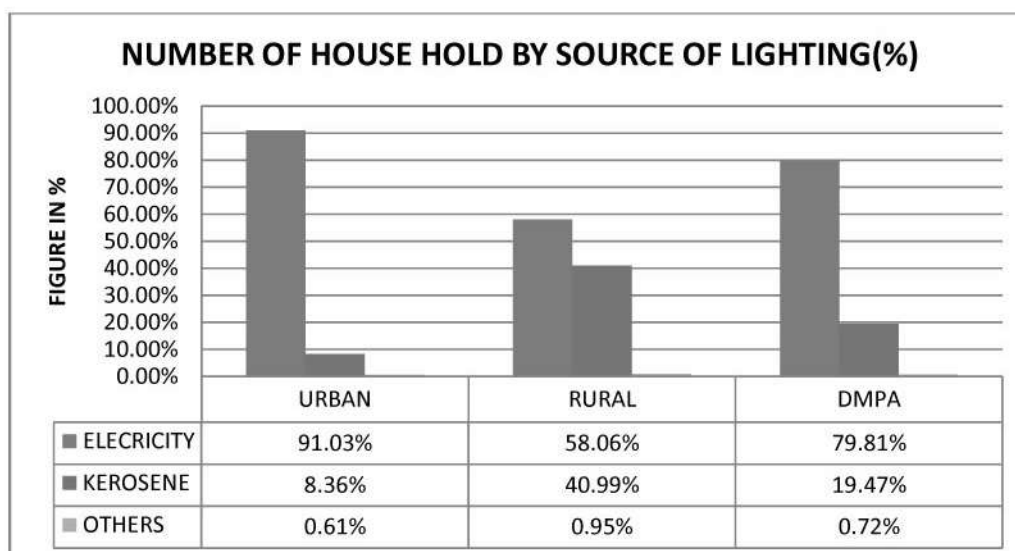
**Figure:-12**  
**Housing Condition**



**TABLE NO - 14**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD BY SOURCE OF LIGHTING**

Particulars	Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
	No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
<b>Electricity</b>	6834	91.03	2252	58.06	9086	79.81
<b>Kerosene</b>	628	8.36	1589	40.99	2217	19.47
<b>Solar</b>	14	0.19	12	0.31	26	0.23
<b>Other oil</b>	8	0.11	10	0.27	19	0.17
<b>Any other</b>	4	0.05	1	0.07	5	0.04
<b>No lighting</b>	20	0.26	12	0.30	32	0.28
<b>Total</b>	7508	100.	3877	100	11385	100

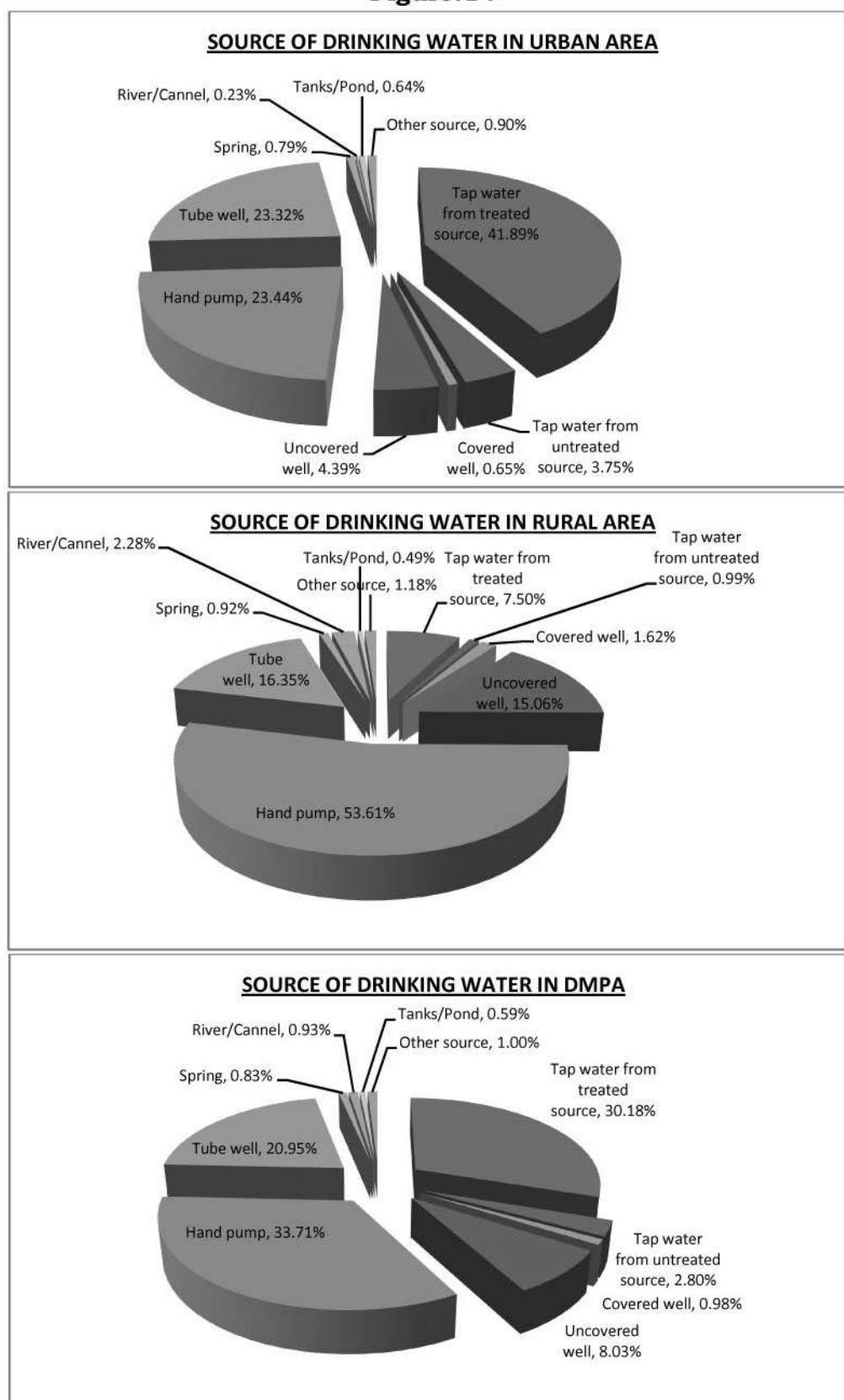
Source: Census of India, 2011

**Figure-13**

**TABLE NO - 15**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD**  
**BY MAIN SOURCE OF DRINKING WATER**

Particulars	Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
	No. of H/Hs	Percentage	No. of H/Hs	Percentage	No. of H/Hs	Percentage
Tap water from treated source	3145	41.89	291	7.50	3436	30.18
Tap water from untreated source	281	3.75	38	0.99	319	2.80
Covered well	49	0.65	63	1.62	112	0.98
Uncovered well	330	4.39	584	15.06	914	8.03
Hand pump	1760	23.44	2078	53.61	3838	33.71
Tube well	1751	23.32	634	16.35	2385	20.95
Spring	59	0.79	36	0.92	95	0.83
River/Cannel	17	0.23	88	2.28	105	0.93
Tanks/Pond	48	0.64	19	0.49	67	0.59
Other source	68	0.90	46	1.18	114	1.00
Total	7508	100	3877	100	11385	100

Source: Census of India, 2011

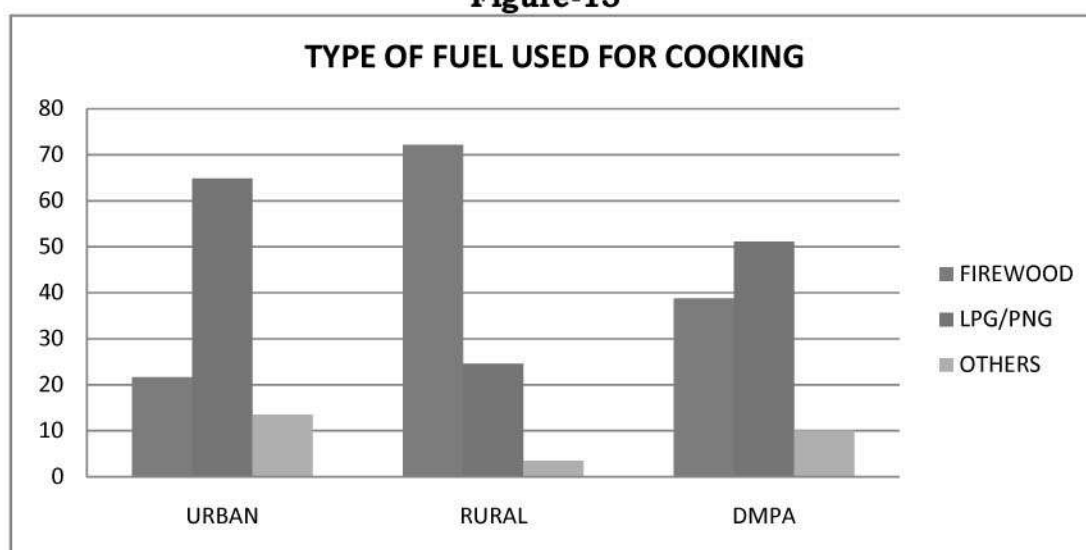
**Figure:14**

**TABLE NO - 16**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD BY TYPE OF FUEL USED FOR COOKING**

Particulars	Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
	No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
<b>Firewood</b>	1627	21.67%	2792	72.02%	4419	38.81%
<b>Crop Residue</b>	58	0.77%	43	1.08%	101	0.89%
<b>Cow-dung cake</b>	7	0.10%	5	0.14%	12	0.10%
<b>Coal etc.</b>	672	8.95%	59	1.51%	731	6.42%
<b>Kerosene</b>	215	2.87%	17	0.45%	232	2.04%
<b>LPG/PNG</b>	4867	64.82%	951	24.53%	5818	51.10%
<b>Electricity</b>	2	0.02%	2	0.06%	4	0.03%
<b>Biogas</b>	14	0.19%	5	0.14%	19	0.17%
<b>Any other</b>	7	0.09%	3	0.07%	10	0.09%
<b>No Cooking</b>	39	0.52%	-	-	39	0.35%
<b>Total</b>	7508	100.00%	3877	100.00%	11385	100.00%

Source: Census of India, 2011

**Figure-15**

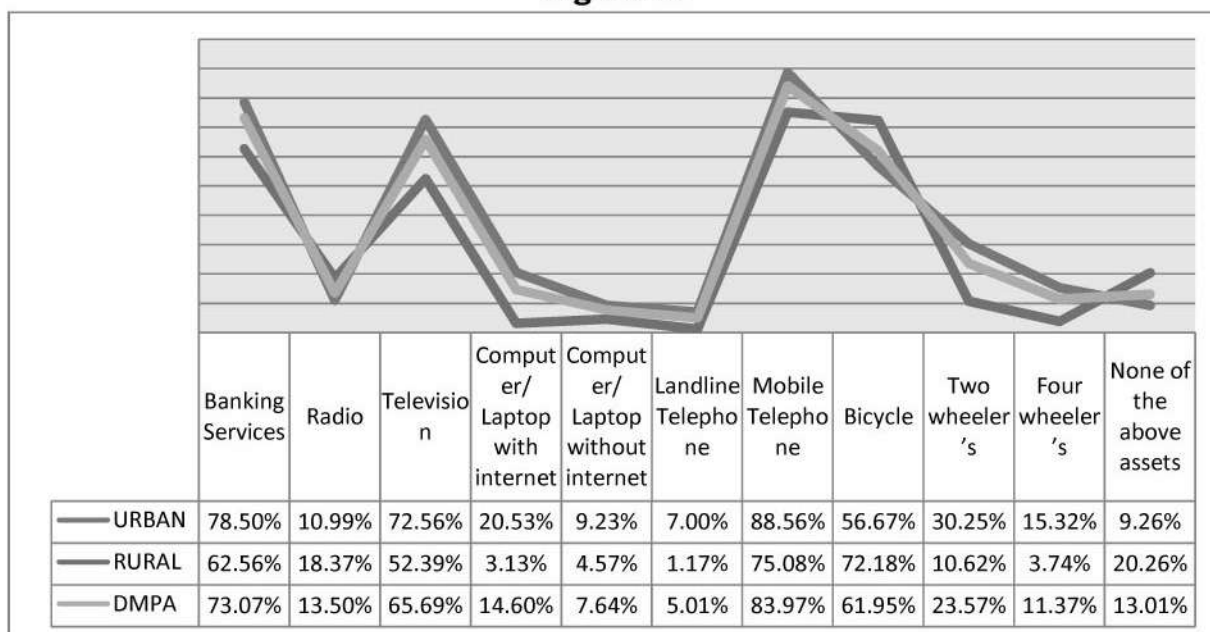


**TABLE NO - 17**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD AVAILING**  
**BANKING SERVICES AND HAVING EACH OF THE SPECIFIED ASSETS**

Particulars	UrbanArea		RuralArea		MasterplanArea	
	No. of household	%	No. of household	%	No. of household	%
<b>Banking Services</b>	5894	78.5%	2425	62.56%	8319	73.07%
<b>Radio</b>	825	10.99%	712	18.37%	1537	13.50%
<b>Television</b>	5448	72.56%	2031	52.39%	7479	65.69%
<b>Computer/ Laptop with internet</b>	1541	20.53%	121	3.13%	1662	14.60%
<b>Computer/ Laptop without internet</b>	693	9.23%	177	4.57%	870	7.64%
<b>Landline Telephone</b>	525	7.00%	45	1.17%	570	5.01%
<b>Mobile Telephone</b>	6649	88.56%	2911	75.08%	9560	83.97%
<b>Bicycle</b>	4255	56.67%	2798	72.18%	7053	61.95%
<b>Two wheelers</b>	2271	30.25%	412	10.62%	2683	23.57%
<b>Four wheelers</b>	1150	15.32%	145	3.74%	1295	11.37%
<b>None of the above assets</b>	695	9.26%	785	20.26%	1480	13.01%

Source: Census of India, 2011

**Figure-16**



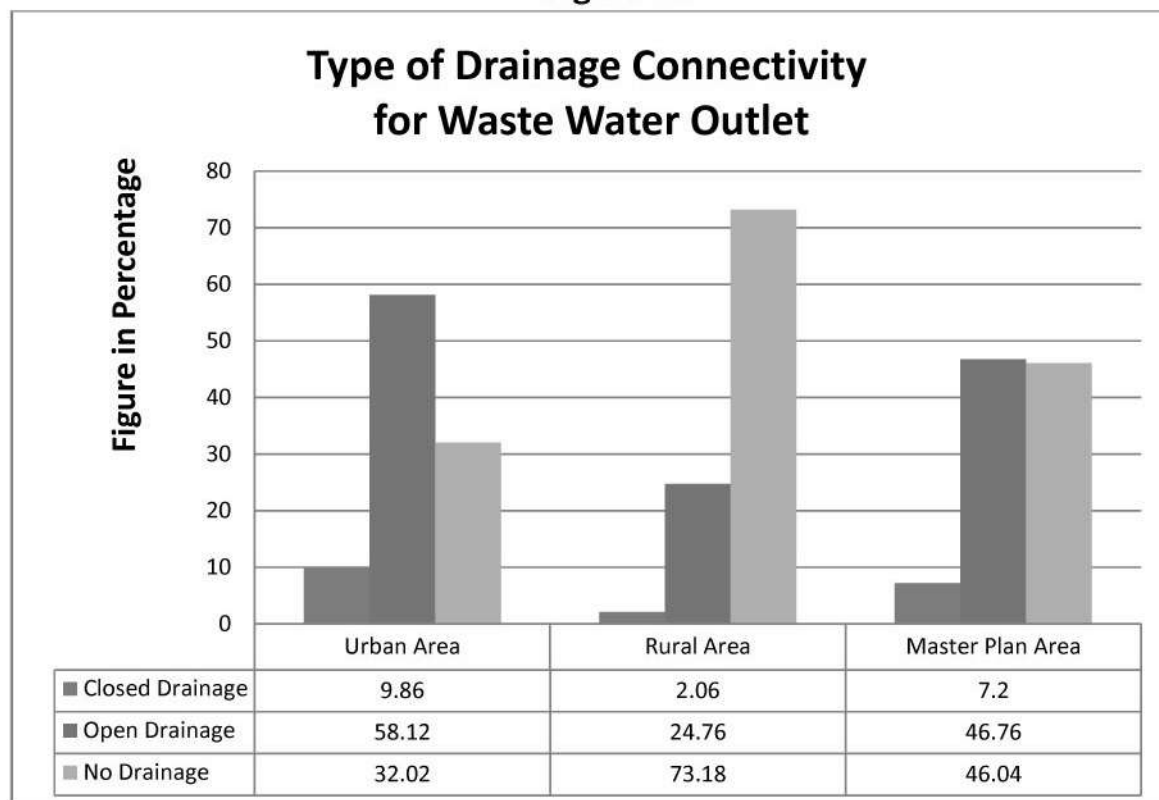


**TABLE NO - 18**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD BY TYPE OF DRAINAGE**  
**CONNECTIVITY FOR WASTE WATER OUTLET**

Type of Drainage	Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
	No. of household	%	No. of household	%	No. of household	%
<b>Closed Drainage</b>	740	9.86%	80	2.06%	820	7.20%
<b>Open Drainage</b>	4364	58.12%	960	24.76%	5324	46.76%
<b>No Drainage</b>	2404	32.02%	2837	73.18%	5241	46.04%
<b>Total</b>	7508	100.00%	3877	100.00%	11385	100.00%

Source:- Census of India 2011

**Figure-17**

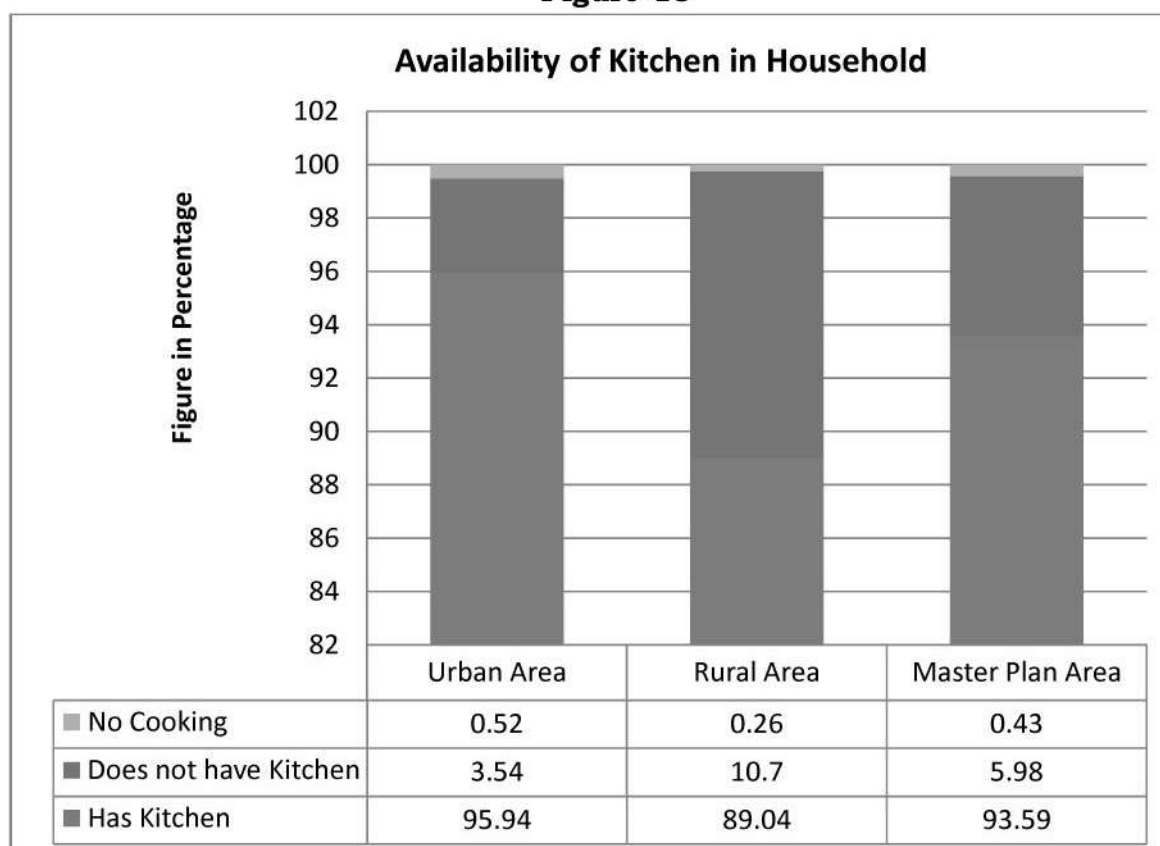


**TABLE NO - 19**  
**NUMBER AND PERCENTAGE OF HOUSEHOLD BY AVAILABILITY OF KITCHEN**

Availability of Kitchen		Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
		No. of household	Percentage	No. of household	Percentage	No. of household	Percentage
Cooking inside house	Has Kitchen	6786	90.38%	3129	80.71%	9915	87.09%
	Does not have Kitchen	417	5.56%	323	8.33%	740	6.50%
Cooking outside house	Has Kitchen	216	2.88%	289	7.46%	505	4.44%
	Does not have Kitchen	50	0.66%	126	3.24%	176	1.54%
No Cooking		39	0.52%	10	0.26%	49	0.43%
Total		7508	100.00%	3877	100.00%	11385	100.00%

Source: Census of India, 2011

**Figure-18**



#### 4.4 Housing Stock, Shortage and Need Assessment

There are about 4643 nos. of houses within Digboi Municipal Board area and 2865 nos. of houses in Digboi oil town and as a whole there are 7508 nos. of houses in Digboi urban area in the year 2011. The numbers of houses in rural area of Digboi masterplan are 3877 nos. According to 2011 census, in Digboi masterplan area the total numbers of houses are 11385 nos. out of this approximately 82% houses i.e. 9336 nos. houses are used for residential purposes. Since there are 52052 person's in DMPA in the year 2011 and the above housing figure shows that an average of 5.5 person's per house, housing accommodation is available for 51348 person's and for the remaining 704 person's additional housing accommodation of 128 nos. are required in the year 2011 itself. The remaining 2049 nos. or 18% houses are used for commercial, public & semi-public, institutional number of persons per residential or partly residential house in Digboi is 5.58.

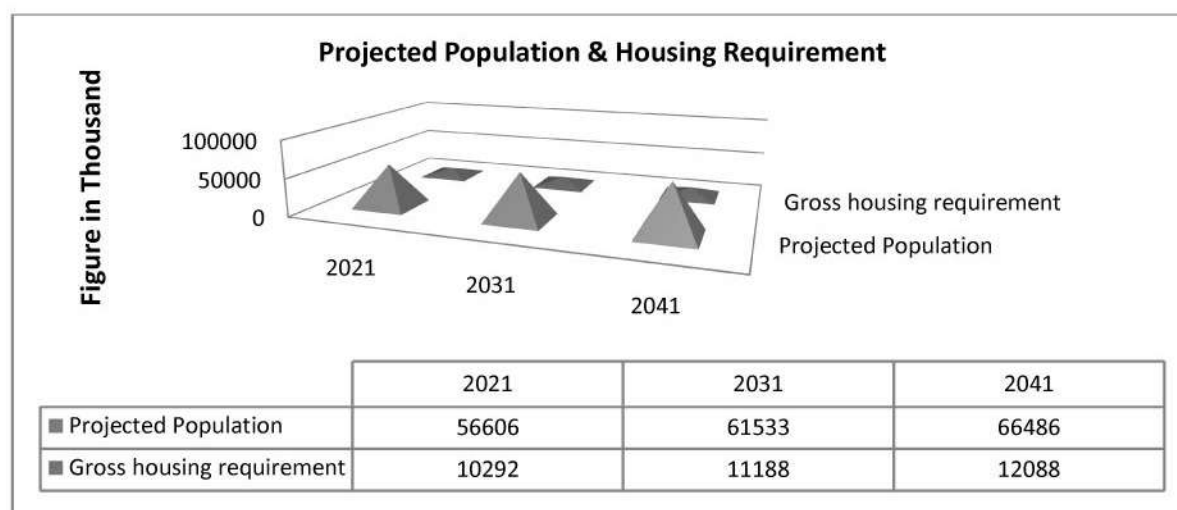
To find out the housing requirement for future, a detailed study of family size level of obsolescence, existing shortage etc. are necessary. However, on the basis of projected population and household size of 5.5 person's the gross housing need is assessed below:

**TABLE NO - 20**  
**HOUSING REQUIREMENT IN DMPA**  
**FOR RESIDENTIAL PURPOSE UPTO 2041**

Year	Projected Population	Gross housing requirement
2021	56606	10292
2031	61533	11188
2041	66486	12088

Source

**Figure-19**



It is estimated that the total housing requirement for residential purposes up to 2041 in the masterplan area are 12088 nos. houses for a projected population of 66486 persons. Since the number of existing houses for residential purpose are 9336 nos., so additional housing requirement for the increasing population will be 2752 nos. of houses in the year 2041. The plan therefore has paid attention to the magnitude of housing problem and recommended that necessary housing schemes by various agencies with the help of Govt. should be undertaken with the frame work of the masterplan.

## **CHAPTER-5**

### **5. TRANSPORTATION**

#### **5.1 Network of Roads**

Urban road network is considered as engines of economic growth. The road within oil town is sufficient width and well equipped. However, the roads in Digboi Municipal Board area are very narrow and shoulder width is insufficient to accommodate the present traffic volume for easy movement except N.H.-38 and there is also little scope for the widening. There are two level crossings within the master plan area, one is at Digboi town which remain always busy and requires immediate improvement. The 2<sup>nd</sup> one is situated at AOD-Muliabari road. Moreover, road junctions in the town are not technically developed and it requires immediate technical intervention.

The roads within the residential areas in Digboi Municipal Board area are too narrow. Widening of these roads is urgently necessary. There is hardly any parking area within the town.



For smooth traffic movement in Digboi master plan area the plan provides 202.68 hectare of land, which constitute 7.75 % of the master plan area for circulation purposes. In this plan, emphasis has been given on the following aspects for effective transportation system in Digboi master plan area.

- (i) Optimum use of the existing transportation system through improved traffic operation and controls.
- (ii) Improvement of the existing road network through strengthening and widening.
- (iii) Provision for adequate parking facilities.
- (iv) Development of new roads and other transport facilities.

The plan recommends development of road infrastructure as per table given below:

**TABLE NO:-21**  
**CATEGORY OF ROADS**

Category of roads	Name	Existing Width	Recommended width
<b>Major</b>	Makum - Digboi – Margherita road  NH.38	60'	70 to 80 feet
	Digboi-Duliajan road	40'	50 to 60 feet
	Digboi-Pengeri road	35'	40 to 50 '
<b>Arterial</b>	IOCL road	30'	35 to 40 '
<b>Sub- Arterial</b>	Mission Para road	30'	35 to 40'
	Tipam road	30'	35 to 40'
	Muliabari road	30'	35 to 40'
	Josoda Road	30'	35 to 40'
<b>Other Road</b>	-----		Min 20 ' & 12' for Single Plot

Source:-Prop. By T&CP, Dibrugarh

## 5.2 OVERVIEW OF CRITICAL ROADS AND IMPROVEMENT

Digboi well connected with the rest of the country by roads. The National Highway have connected Digboi with other places as shown below: -

- a) Digboi to Margherita
- b) Digboi to Tinsukia
- c) Digboi to Dibrugarh via Tinsukia
- d) Digboi to Jagun via Ledo
- e) Digboi to Changlang of Arunachal Pradesh
- f) Digboi to Miao of Arunachal Pradesh
- g) Digboi to Deomali of Arunachal Pradesh.

Digboi is also connected with railway network from Ledo to Guwahati. The railway station of Digboi facilitates the passengers to travel to Guwahati via Tinsukia and also outside Assam. Beside train plying of taxis, buses, winger and trucks are playing a major role in transporting passengers and goods to and from Margherita.

Digboi town has gained importance in the field of industry and business owing to its industrial base and existence of nearby industrial and business towns like Ledo, Margherita, Makum and Tinsukia. This has resulted in to increase of vehicles on the roads of Digboi town. On the other hand, a good number of ASTC buses, private buses and winger ply through the town. The buses and small vehicles plying through Margherita town follow the following routes:

The buses and small vehicles plying through Digboi town follow the following routes:

- a) Miao of Arunachal Pradesh to Tinsukia, Dibrugarh via Digboi.
- b) Jagun to Dibrugarh, Jorhat via Digboi.
- c) Deomali of Arunachal Pradesh to Dibrugarh via Digboi.
- d) Ledo to Tinsukia, Dibrugarh via Digboi.
- e) Digboi to Guwahati via Tinsukia (both day & night service)

## 5.3 Bus Transport Terminals

At present both ASTC and private bus stations are located along the road side of N.H-315 at Digboi town.





At present Taxi, Auto and Bus stand near ASTC Bus Stand at NH 315 NH-115. This stand is also creating congestion and obstruction to the smooth flow of traffic during peak hours.

In Digboi town the surface condition of the road is much better than other towns and the access roads widen in DMPA. Most of the traffic generated from Ramnagariniali to Digboi Pengritiniali, Pengri Road, Digboi CISF Camp to Namdang House. But the entire area does not have organized parking space.

Keeping in view the above, the plan recommends for new Bus terminus and renovation of the existing Bus cum Auto stand in the North part of master plan area.

#### **5.4 Freight Zones Logistics**

Presently there is no truck terminus at Digboi. The loading and unloading from trucks are carried out by the side of road at NH. 315 & 215 in CMPA.

#### **5.5 Footpaths and Bicycle Tracks**

Footpaths are normally designed for pedestrian for pleasant and comfortable walking. In Digboi there are some roads having footpath in the town. There is no cycle track in the town.

Exclusive lane for slow moving vehicles, pedestrians along with spaces for street vendors are also essential for overall development of a town. The hawkers and street vendors also play an important role in urban economy. The notification of vending and no vending zone by the authority is mandatory as per the provisions of the Street Vendors Act, 2014. This improves the capacity of the lanes designed for motorized vehicles and increases the safety of slow moving vehicles and pedestrians.

The plan suggests construction of footpath in both sides of all the roads in the town by the concerned authority. The plan also earmarks cycle track in the Digboi Pengeri Road (near War Cemetery) and road inside Digboi refinery town.



The width of footpath as per URDPFI guidelines is follows:

**TABLENO:-22**  
**WIDTH OF FOOTPATH**

Sl. no	Description	Width(mtr)
1	Minimum free walkway width in residential/mixed use areas	1.8
2	Commercial/Mixed Use Areas	2.5

The **URDPFI Guideline** for cycle /NMT track are given in the following table:

**TABLENO:- 23**  
**CYCLE TRACK**

Sl. No.	Arterial Roads	SUB Arterial Roads	Distributary Road	Access Roads
<b>Non-Motorized Vehicle</b>	Segregated cycle track	Segregated cycle track	Cycle lane	Mixed/traffic
<b>Location</b>	Between carriageway or street parking and footpath on either edge of the carriageway	Between carriageway or street parking and footpath on either edge of the carriageway	On the edge of the carriage,adjacent to the footpath or parking	Not applicable
<b>Gradient</b>	1:12-1:20	1:12-1:20	1:12-1:20	1:12-1:20
<b>Lane width</b>	2.2 to 5.0m	2.2 to 5.0m	2.2 to 5.0m	Mixed with motorized vehicular traffic
<b>Minimum width</b>	2.5 for a two lane cycle track and 1.9m for a common cycle track and footpath	2.0 for a two lane cycle track and 1.7m for a common cycle track and footpath	1.5m	1m(painted)

## 5.6 Parking

At present, there is no organized parking space for the cars, two wheelers in the market area. The cars are generally parked on the main road of the

town. The roads are already overcrowded with traffic and further encroachment on road surface by cars and two wheelers has resulted obstructed traffic congestion.

The recommended equivalent car space (ECS) required for different type of vehicles as per **URDPFI** guidelines are given in the following table for design of parking areas.

**TABLE NO:-24**  
**PARKING SPACE**

<b>Sl. no</b>	<b>Vehicle type</b>	<b>ECS</b>
1	Car /taxi	1.00
2	Two Wheeler	0.25
3	Auto Rickshaw	0.50
4	Bicycle	0.10
5	Trucks/Buses	2.5
6	Emergency Vehicles	2.5
7	Rickshaw	0.8

### **5.7 Areas with Major Traffic Congestion and Parking Issue, Accident Prone Area**

The maximum inter -town traffic volume is generated on the road starting from Ramnagartiniali to Digboi Pengritiniali, Pengri Road. This is the most vital link for both to the town and the rest of the district. The two inter town traffic generating roads are Digboi Pengri road and Digboi CISF Camp to Namdang House.

The presence of mixed traffic has accelerated traffic congestion in Digboi. The town has mainly two accident prone areas, namely the area adjacent between Ramnagartiniali to Digboi Pengritiniali (NH- 315 & 215) and Digboi CISF Camp to Namdang House (NH- 315 & 215) signage and marking in the road in these areas is the need of the hour.

The heavy vehicles belonging to oil, coal and tea industry ply daily through the town and is also a cause of concern for public safety.

### **5.8 Improvement of Rotary and Junctions**

The town does not have a road rotary and plan does not foresee its requirement. However, improvement of all road junctions as per IRC guidelines is urgent and important for improving the traffic scenario.

### 5.9 Street Lighting and Proposed Improvement Plan

The town is illuminated by Digboi municipality with 20nos. High mast light, 540nos. of street light for the convenience of the people.



### 5.10 Signage: Availability and Requirement

The ULB, traffic and other concerned departments will assess the requirement of signage and accordingly install the signage as per the rules and regulations for the beautification of the town as well as smooth flow of traffic and public convenience.

### 5.11 Major Proposals

- I. One truck stand at No.1 Borbilgaon.
- II. One Freight Zone & Logistic center proposed at No.1 Borbilgaon.
- III. The authority concern may develop existing bus stand with all facilities required for commuters.
- IV. Considering the scenic beauty of the town, the plan recommends plantation along the major roads and development of traffic points to augment the aesthetic beauty of the town.

**CHAPTER 6****6 INFRASTRUCTURE, PUBLIC UTILITY & SERVICES****6.1 Physical Infrastructure****6.1.1 Water Supply**

Digboi do not have a water supply scheme and presently AUWS&SB is preparing a scheme for the town. Piped water supply system is only available within Digboi oil town and to its just adjacent areas and for the other areas of the town as well as in rural areas there is no pipe water supply system. The AOD Limited is presently supplying potable water only to its township. For the rest of the town and rural areas, the only source of water is tube well and the ring wells as ground water and surface water is readily available at Digboi and its adjoining areas. Though the tube well and ring well are efficiently functioning, it will no longer be considered as free from contamination due to presence of a number of pit latrines. A comprehensive water supply scheme with treatment plant covering the population up to 2041 is the need of the hour.

The objective of a public protected water supply system is to supply safe and clean water in adequate quantity, conveniently and as economically as possible. Rising demand of water due to rapid urbanization is putting enormous stress while planning the water supply system for an area; it is evident to consider water conservation aspects, which may be possible through optimal use of available water resources, prevention and control of water and effective demand management

**6.1.2 URDPFI Guideline's for Water Requirement**

As per URDPFI guidelines the norms for water requirement for institutional buildings are given below:-

**TABLE NO-25**  
**REQUIREMENT FOR INSTITUTIONAL BUILDINGS**

<b>Sl.No</b>	<b>Institutions</b>	<b>Litters per head per day</b>
<b>1.</b>	Hospitals (including laundry)	--
<b>a)</b>	No. of beds exceeding 100	450 (per bed)
<b>b)</b>	No. of beds not exceeding 1000	350 (per bed)
<b>2.</b>	Hotels	180 (per bed)
<b>3.</b>	Hostels	135
<b>4</b>	Boarding Schools	135
<b>5</b>	Restaurants	70 (per seat)

<b>6</b>	Day school / colleges	45
<b>7</b>	Offices	45
<b>8</b>	Cinema, concert halls and theatre	45

In addition to the above the fire- fighting water demand is also as a function of population. It is desirable that one-third of fire fighting requirements from part of the service storage. The balance requirement may be distributed to several state tanks of strategic points. These strategic points may be filled from nearby pond streams or cannels by water tankers wherever feasible.

The plan also recommends preparation of a comprehensive potable water supply scheme as per guideline of CPHEEO manual of Govt. of India to cater the needs of the estimated population of 53686 up to 2041 by a competent authority.

### **6.1.3 Drainage system**

The drains mainly carries industrial as well as residential wastes. Direct dumping of residential and commercial garbage into the channel is making it shallower and heavily silted as the drains of the town are also becoming a regular garbage-dumping site. Moreover, these drains are not planned properly to carry even the regular water.

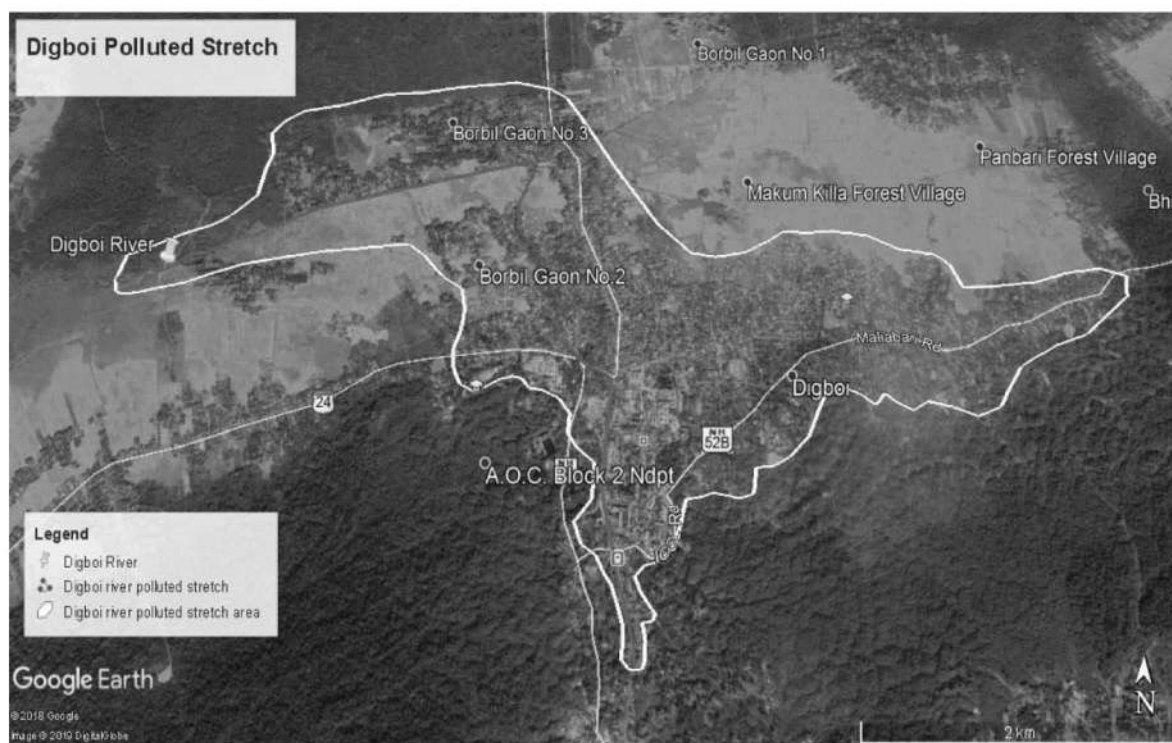
Some natural drainage of local origin are acting as the drainage system to evacuate sewage originating from domestic households, commercial establishments, institutes, industries etc. There is no drainage masterplan at present.

The Digboi River is a small river which is a sub-tributary of the Burhidihing River and criss-crosses the Dihing Reserve Forest (West Block). The river has its origin at upper Dihing Reserve Forest near Golf Course and flows towards the Tiplingriver. The river after flowing through the Tiplingriver, finally turns towards Buridihing and then confluence with the river. It has its entrance point to the Digboi town at Ram Nagar Bridge, Digboi. The catchment of the river extends to a number of villages, Lakhipathar Reserve Forest, Oil collecting stations and paddy fields. The river flows for about 32 km from here to its confluence point, BamuniGaon, Ushapur and falls in the river Burhidihing, which is the largest tributary of the Brahmaputra. It is a perennial river and carries water throughout the year. The bank of the river Digboi is composed of alluvial soil. The alluvialdeposits are characterized by its coarse nature, reddish colour and sandy clay.



## (A) Polluted river stretch/length :-

The length of the polluted stretch of Digboi River is 7.6 km with an area of 11.7 sq.km. shown in figure below. The stretch identified as polluted is from IOCL Oil town to Lakhpathar Reserve Forest.



Digboi town and Digboi oil town are the major localities situated on the bank of the Digboi river. The localities being Netaji Nagar, Ananda Para, Mission Para, Jyoti Nagar etc. Moreover, two (02) numbers of villages namely Borbil No.2 and Borbil No.3 are also situated along the polluted river stretch. These villages are medium sized and settled in scattered plan.

Industrial Pollution Control Classified industrial units in the form of Health care Units, Hotels, Tea estates etc. are observed with infrastructural facilities (ETPs, STPs) in the periphery of the polluted river stretch of Digboi river along with few small scale industrial establishments

The river receives storm water along with municipal sewage by two drains coming from Digboi Township at Borbil no.3 at a distance of 1 km from Ram Nagar Bridge, Digboi. However, few drains of natural origin also exist that aid in evacuating the city sewage originating from households, commercial establishments, institutes, industries etc.



#### **6.1.4 Sanitation**

In Digboi urbanarea almost 61% household use septic tank and 16% household use pipe sewer system. In ruralareas of Masterplan the use of septic tank by the household is 26% which is much lower as compared to the urbanareas. In the masterplanarea as a whole the percentage of households use septic tank are 49%. In the MasterplanArea, almost 15% household use pit which are not conducive for health and environment. This type of condition is prevailed in all over India. As such, The Government of India in the year 2014 introduced the Swachh Bharat Mission (SBM) which is being implemented by the Ministry of Urban development and Ministry of Drinking and sanitation for urban and ruralareas respectively. The main objective of the mission is – Elimination of open defecation, Eradication of manual scavenging, Modern and scientific Municipal Solid Waste Management, to effect behavioural changed regarding healthy sanitation practices, generate awareness about sanitation and its linkage with public health, capacity Augmentation for ULB's.

Swachh Bharat Mission (SBM) will improve the health conditions of every Indians. This practice will be able to prevent many types of diseases in the country and we will be able to have a happy and healthy society. SBM can be able to build a better eco-friendly environment in the country and can give better life to our upcoming generations. SBM will also help in generating employment through tourism and boos India's Gross Domestic Product (GDP).

Unhygienic condition's is one of the major root courses of diseases/illness. Any disease or illness has financial impact both in terms of expenditure and potential revenue earning. As such, SBM will have positive impact on India's health care sector. SBM will plug the loss due to unhygienic and lacks of cleanliness and will help to case burden on existing health care facilities. SBM will lead to Health India which in turn increases productivity of Indians. High productivity means high earning potential. Under current economic conditions, India desperately need Foreign Direct Investment (FDI) for this the country must be clean.

SBM will benefit socially and financially each & every citizen of India. If we want financial growth then we have to collectively make SBM a roaring success in future. SBM is one of the critical links towards economic success of India. Under SBM it is estimated that about 20% of the urban household in towns, who are currently practicing open defecation are likely to use community toilets as a solution due to land and space constraints in constructing individual household latrines. For this component beneficiaries shall be groups of household in urban area whose members practice open defecation and who do not have access of two household toilets and for whom the construction of individual household toilet is not feasible.

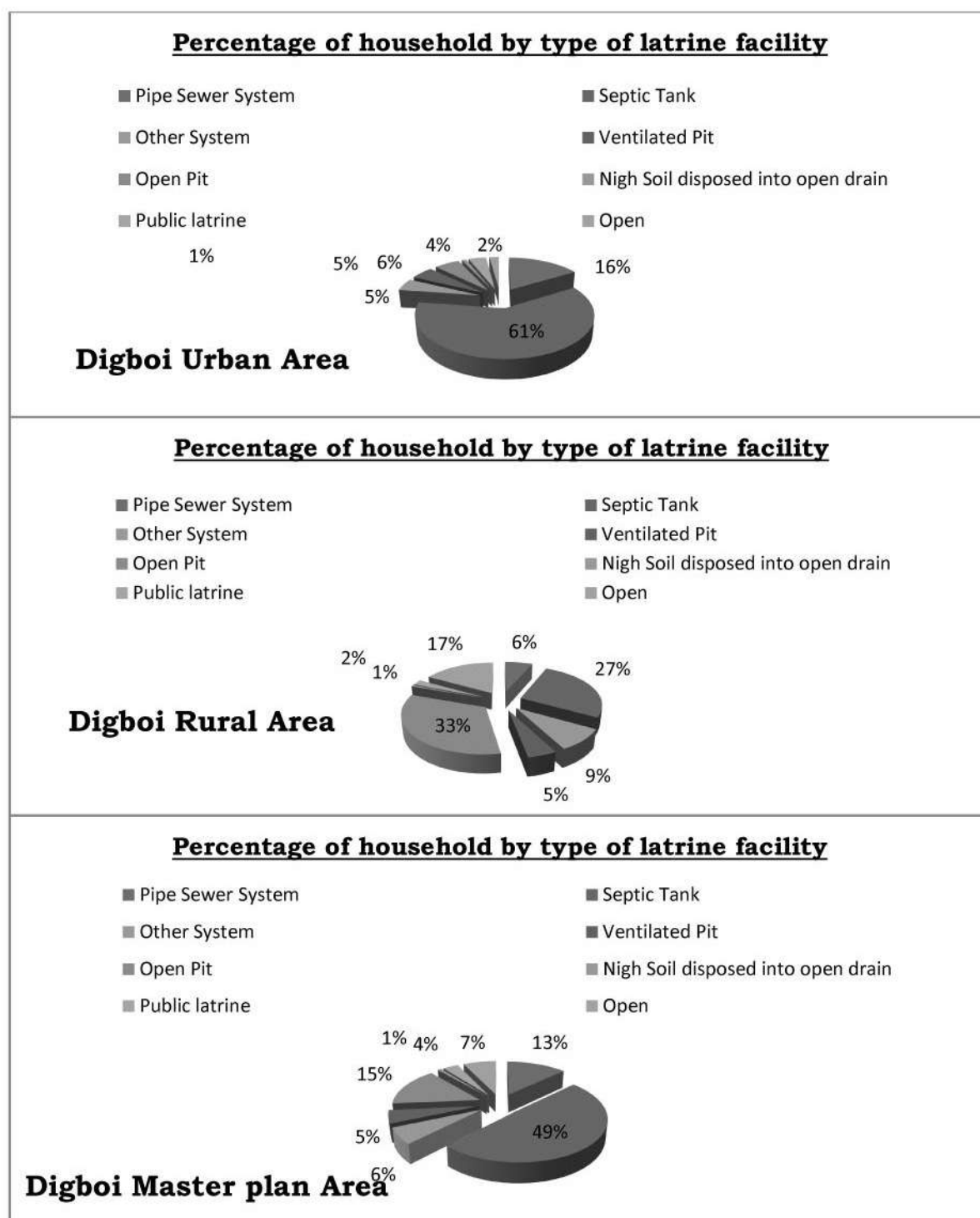
Under SBM, ULB's will ensure that a sufficient number of public toilet to be constructed in the town. All prominent places within the town attracting floating population should be covered. Cares should be taken to ensure that these facilities have adequate provision for man, woman and facilities for the disabled (e.g. ramp provision, Braille signage etc.) wherever necessary.

**TABLE NO:- 26**  
**Number and Percentage of house hold by type of latrine facility.**

TYPE OF LATRINE FACILITY	Digboi UrbanArea		Digboi RuralArea		Digboi MasterplanArea	
	No of Household	Percentage (%)	No of household	Percentage (%)	No of household	Percentage (%)
Pipe Sewer System	1222	16.28%	252	6.51%	1474	12.95%
Septic Tank	4582	61.08%	1036	26.71%	5618	49.35%
Other System	361	4.81%	350	9.03%	711	6.25%
Ventilated pit	389	5.18%	187	4.81%	576	5.06%
Open pit	425	5.66%	1290	33.27%	1715	15.06%
Night Soil disposed into open Drain	71	0.94%	23	0.60%	94	0.82%
Public Latrine	298	3.97%	87	2.25%	385	3.38%
Open	160	2.13%	652	16.82%	812	7.13%
<b>TOTAL</b>	<b>7508</b>	<b>100%</b>	<b>3877</b>	<b>100%</b>	<b>11385</b>	<b>100%</b>

Source:- Census of India, 2011

**FIGURE-20**  
**HOUSEHOLD BY TYPE OF LATRINE FACILITY**



### 6.1.5 URDPFI Guidelines for Public Toilets

The general standard for public toilets in public area and modified norms for public toilets in public places and roads recommended **in URDPFI guideline** are given below:-

**TABLE NO:- 27**  
**NORMS FOR PUBLIC TOILETS IN PUBLIC AREA.**

TYPE	NORMS FOR TOILETS
<b>Public toilets</b>	On road and for open areas every 1 Km. including parks, open air theater, car parks and fuel station. Toilets shall be disabled friendly and in 50 : 50 ratio ( M / F)
<b>Signage</b>	Signboards on main streets shall given directions and mention the distance to reach the nearest public convenience of visitors. Helpline number shall be pasted on all toilets for complaints / queries
<b>Modes</b>	Pay and Use or free in pay and use toilets entry is allowed on payment to the attendant.
<b>Maintenance / Cleaning</b>	The toilets have both men and women attendants. Alternatively automatic cleaning cycle covering flush, toilet bowl, seat, hand wash basin, disinfecting of floor and complete drying after each use can be adopted. Public toilets shall be open 24 hrs.

The urban local body can follow the above norms for construction the public toilet and maintenance thereafter.

### 6.1.6 Sewerage Network

Like the rest of the towns of the state, Digboi also does not have sewerage network and treatment plant. Human night soil is generally disposed at conventional septic tanks or low cost sanitary pits. Till the execution of the sewerage scheme, it is recommended to encourage the people to construct sanitary latrines of their own and to cover poor families under Swachh Bharat Mission. The sewage generation in Digboi town is shown below :-

S.N	Area	Wards	Population as per 2011 census	Water Consumption (KLD) @135lpcd	Sewage Generation (KLD)	No. of STPs Proposed	Existing Treatment capacity (KLD)	Total Gaps in KLD
1	Digboi Town Committee	01	1,731	233.7	186.4	01	Nil	4714.8
		02	2,993	404.1	323.3			
		03	3,818	515.4	412.3			
		04	3,235	436.7	349.4			
		05	4,385	877.0	701.6			
		06	2,485	335.5	268.4			
		07	1,750	236.3	189.1			
		08	1,339	180.8	144.6			
2	Digboi Oil town	1	12726	1718.0	1374.4			
3	Borbil No. 2	-	3903	527.7	422.2			
4	Borbil No. 3	-	3177	428.9	343.1			
<b>Total</b>			<b>41542</b>	<b>5894.1</b>	<b>4714.8</b>			

Source:-Environment & Forest Department Government of Assam

### 6.1.7 Solid Waste Management

There is no planned solid waste management system or even a landfill site for scientific disposal of the solid waste at Digboi. Since the town is expanding in recent years, so the situation only stands to worsen unless concerned authorities give a serious thought to the problem. At present AOD refinery maintains the market area and collects 4 to 5 MT of solid waste daily and dumped at Oil field dumping ground. DMB is collecting approximately 3 MT of solid waste with hand craft from the rest of the town and dump at Golai No.5 covering an area of approx 10 Bigha, adjacent to the DMPA. This plan suggests to develop the site scientifically for Solid Waste Management System for the DMPA.

The Town generates a good amount of biodegradable solid waste besides plastic waste and malted wastes. So, this plan has suggested a few steps for scientific solid waste management system in Masterplan Area. This includes segregation of bio-degradable and non-biodegradable solid waste at source, construction of compact pits at all residential houses in order to produce compost wherever feasible, introduction of specific litter bins for collection of segregated bio-biodegradable and non-biodegradable solid waste for soil conditioning and recycling purpose respectively, and doing away with the system of dust bins along roads which is a major cause of pollution.

The duties and responsibilities of ULB's as per revised Solid Waste Management rules of 2016 are given below:

- (i) The ULB's shall prepare a Solid Waste Management plan as per state policy within six (6) months.
- (ii) Arrange for door to door collection of segregated solid waste; integrate rag pickers/informal waste collectors in solid waste management.

- (iii) Frame bye-laws incorporating the provisions of these rules within one year, prescribed user fee.
- (iv) Direct waste generators not to litter and to segregate the waste at source and handover does aggregated waste to authorized waste pickers, the waste collector authorized by the ULB.
- (v) Set up material recovery facilities or secondary storage facilities and provide easy access to waste pickers and recyclers for collection of segregated recyclable waste.
- (vi) Established waste deposition centre for domestic hazardous waste and ensure safe storage and transportation of the domestic hazardous waste to the hazardous waste disposal facility or as may be directed by the state pollution control board.
- (vii) Direct street sweepers not to burn tree leaves collected from street sweeping and store them separately and hand over to the waste collectors or agency authorized by ULB.
- (viii) Provide training on solid waste management to waste pickers and waste collectors.
- (ix) Promote setting up of decentralized compost plant or bio – meth nation plant at suitable locations in the markets or in the vicinity of markets ensuring hygienic conditions.
- (x) Collect separately waste from sweeping of streets, lanes and by-lanes daily or on alternate days or twice a week depending on the density of population, commercial activity and local situation.
- (xi) Involve communities in waste management and promotion of home composting, bio – gas generation, decentralized processing of waste at community level subject to control of odour and maintenance of hygienic conditions around the facilities.
- (xii) Educate workers including contract workers and supervisors for door to door collection of segregated waste and transporting the unmixed waste during primary and secondary transportation to processing or disposal facility.
- (xiii) Ensure that the operator of a facility provides personal protection equipment including uniform, fluorescent jacket, hand gloves, rain coats, appropriate foot wear and masks to all workers handling solid waste and the same are used by the work force.
- (xiv) Create public awareness on solid waste management.



### 6.1.8 Electrical Sub –Station and Major Transformers

Power requirement of Digboi masterplanarea is meeting by the ASEB grid. There are 9086 electric connections i.e. almost 80% households electrically connected in the masterplanarea. The oil township has its own power plant. Digboi Municipal Board area as well as ruralarea is facing the problem of acute scarcity of electricity like the other towns of the state. Since the consumptions is increasing at a fast rate due to increase in population as well as modernization of home appliances and on the other hand APDCL fails to cater the needs of the people causing load shedding in peak hours.

## 6.2 Social Infrastructure

### 6.2.1 Education facilities

The progress and development of a place is closely related to expansion, development and modernization of education facilities. The educational atmosphere in Digboi is good in comparison to nearby towns. For school level education, high quality educational institution like Delhi Public School, Carmel School, Vivekananda Academy provides educational facilities not only to the students Digboi but also the students to its adjoining areas as well as nearby towns. Beside these school, there are so many L.P and High Schools, Such as Digboi High School, Little Star School, R.D. English Academy, Janata Vidyalaya, Rashtriya Vidyalaya, Jatiya Vidyalaya, Digboi Sowmar Vidyapith, KalibariVidyamandir, Bapapung Lower Primary School, BalijanPuberun L.P School, Itavata L.P. School and many other private play house school providing school education in Digboi.



For higher education, Digboi college is a premier institution established in 1965 in Digboi Town. The key role performed by Assam Oil Company in the establishment of the college deserves special acknowledgement. In the last 50 years, the college has built up an impressive infrastructure.





Another important institution for the expansion of women's education in the region is Digboi Mahila Maha Vidyalaya which offers Higher Secondary courses and Bachelor Degree courses in the field of humanities. It was established in the year 1981.



Private educational institution, such as R.D. Junior College and Little Star Sr. Secondary School are also providing the facilities of Higher Secondary courses to the students of the region.

In vocational field Assam Oil College of Nursing is one of the premier institution in the region. Epitome Centre provides computer education and for driving courses, Digboi Motor Driving Training School has also been established in Digboi. Digboi B.Ed College is established at Borbill No.1.



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### 6.2.2 URDPFI Guideline for Education facilities

<b>TABLE NO-28</b>					
<b>NORMS FOR PRE-PRIMARY NURSERY SCHOOL TO HIGHER EDUCATION</b>					
<b>Sl. No</b>	<b>Category</b>	<b>Student Strength</b>	<b>Population served per unit</b>	<b>Area Requirement</b>	<b>Other Controls</b>
<b>1</b>	Pre- Primary Nursery School	-	2500	0.08 Ha	To be located near park
<b>2</b>	Primary School ( Class I to V )	500	5000	Area per School = 0.40 Hec. A) School building area = 0.20 Hec. B) Play field area = 0.20 Hec.	Play field area with a minimum of 18 m X 36 m to be
<b>3</b>	Senior Secondary	1000	7500	Area per School = 1.80 Hec. A) School building area = 0.60	Play field area with a

	School ( VI to XII)			Hec. B) Play field area = 1.00 Hec. C) Parking area = 0.20 Hec.	minimum of 68 m X 126 m to be ensured on effective play.
4	Integrated School without hostel facility ( Class I to XII )	1500	90000 To 1 Lakh	Area per School = 3.50 Hec. A) School building area = 0.70 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec.	To be located near a sport facility
5	Integrated School with hostel facility ( Class I to XII)	1500	90000 to 1 Lakh	Area per School = 3.90 Hec. A) School building area = 0.70 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec. D) Residential area = 0.40 Hec.	To be located near a sport facility
6	School for Physically Challenged	400	45000	Area per School = 0.70 Hec. A) School building area = 0.20Hec. B) Play field area = 0.30 Hec. C) Parking area = 0.20 Hec.	To be located near park or sport facilities
7	College	1000 To 1500	1.25 Lakhs	Area per School = 5.00 Hec. A) School building area = 1.80 Hec. B) Play field area = 2.50 Hec. C) Parking area = 0.30 Hec. D) Residential area = 0.30 Hec.	

From the survey it has been found that most of the education institution except Delhi Public School and Carmel School, the area of the school is not sufficient as per **URDPFI** guidelines and there are no adequate play fields and parking facilities.

So, this plan suggest to take measures by the education department as well as private institution to increase the area of primary school up to 0.40 Hectare including playfield area, for Higher & Higher Secondary School up to 1.80 Hectare including playfield and parking area and for the intermediate school up to 3.50 hectare including playfield, parking facility and hostel facility as per URDPFI guideline.

This plan also suggest for the provision for school for physically challenged child / person's in an area of about 0.70 hectare for the enrolment capacity of 400 with adequate playfield and parking facility by the education department or by any NGO associated with social up liftmen of the region.

Table shows the number of students and additional school required in Digboi MasterplanArea during 2011-2041.

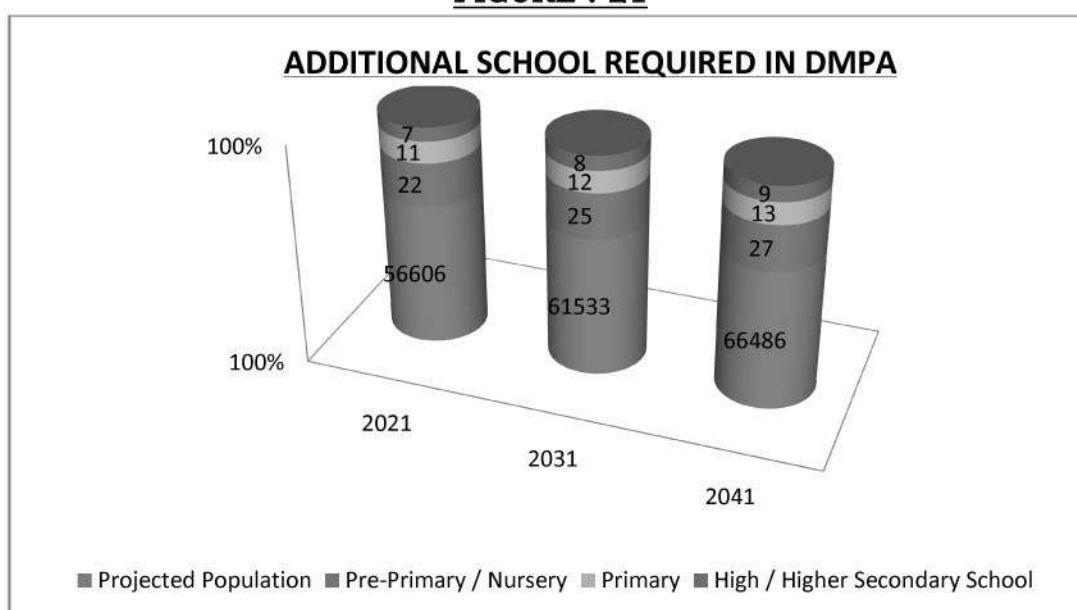
As per URDPFI guideline, the additional school required in DMPA up to 2041 for projected population is given in the following table

**TABLE NO-29**  
**ADDITIONAL SCHOOL REQUIRED IN DMPA**

YEAR	PROJECTED POPULATION	ADDITIONAL SCHOOL REQUIRED		
		<u>Pre-primary /Nursery</u> Student strength- 500 Population served per unit- 2500	<u>Primary</u> Student strength- 500 Population served per unit- 5000	<u>High/Higher Secondary School</u> Student strength-1000 Population served per unit-7500
2021	56606	22	11	7
2031	61533	25	12	8
2041	66486	27	13	9

Source :- Calculated by T&CP, Dibrugarh

**FIGURE :-21**



Source: Estimated by Town & Country Planning, Assam, Digboi

The shortage of schools in the planarea, to some extent has been fulfilled by the private institutions at present and it is also hope that in the future, private institutions will play an important role to mitigate the shortage of primary schools as well as High and Higher Secondary schools.

### **6.2.3 Health Care facilities**

Digboi have a 30(thirty) bedded civil hospital situated within AOD campus, That serves the population of Digboi town as well as its adjoining areas. Besides this AOD have its own refinery hospital. In addition to these Digboi also have a nursing home. These hospital facilities along with the primary health care centers in the surrounding villages of Digboi mainly provides the services to the people of the region. Serious category patients generally rush to Assam Medical College, Dibrugarh situated at a distance of 80 Km from Digboi for better treatment.

### **URDPFI Guideline for Health Care Facilities**

In the health care facilities the size of a hospital depends upon the hospital bed requirement, which in turns is a function of the size of the population it serves. As per URDPFI guideline the calculation of number of beds is based on:-

- A) Annual rate of admission as 1 per 50 population
- B) Average length of stay in a hospital as 5 days.

Since the projected population for Digboi master plan upto the Year 2041 is 94,194, as such, the number of beds required for the said population is :-

- i) No. of beds days per year =  $(94,194 \times 1/50) \times 5 = 9419$
- ii) No. of beds required with =  $9419 / 365 = 26$   
100% Occupancy

The classification of healthcare facilities as URDPFI guideline is given in the following table:-

**TABLE NO:-30**  
**HEALTHCARE FACILITIES**

Sl. No	Category	No. of Beds	Population served per	Area Requirement
1	Dispensary	-	15000	0.08 to 0.12 Ha
2	Nursing home, Child Welfare & Maternity	25 to 30 beds	45000 to 1.00 Lakhs	0.20 to 0.30 Ha
3	Polyclinic	Some observation bed	1.00 Lakhs	0.20 to 0.30 Ha
4	Intermediate Hospital	200 Initially the provision may be for 100 beds including maternity beds	1.00 Lakhs	Total Area = 3.7 Ha. i) Area for hospital = 2.70 Ha. ii) Area for Residential Accommodation = 1.00 Ha.
5	Family Welfare Centre	As per requirement	50,000	Total Area = 500 Sq.m to 800 Sq.m
6	Diagnostic Centre	As per requirement	50,000	Total Area = 500 Sq.m to 800 Sq.m
7	Rehabilitation Centre	-	-	As per requirement

This plan suggest to take appropriate measures by the health department for the provision of 7 nos. of dispensaries at various location within the masterplan area covering an area of 0.08 – 0.12 hectare per dispensary serving at least 15,000 person's. This plan also asked the health department to upgrade the existing civil hospital upto 200 beds with all modern healthcare equipment or serving at least 1(One) Lakh population and asked the authority concern to increase the hospital area upto 3.7 hectare for the hospital building as well as the area for residential accommodation of the hospital staff. This plan also suggest to set-up a family welfare center to serve at least 50000 person's by the health department and also a Re-habilitation center by the Govt. or by any NGO for the upliftment of deprived class of the community.

#### **6.2.5 Parks and Recreation Spaces**

Digboi urban area have 3(three) playground of which 2(two) situated within AOD area. India club established in the year 1918 is a premier institution for indoor game facilities. Digboi also have the facilities of sports like Lawn Tennis, Swimming and Golf. The 18 hole Digboi Golf course is one of the top most golf course in one of the top most golf course in the entire north-eastern region. Culturally vibrant Digboi have also a numbers of community halls and social-cultural institutions like Poragdhara Chaliha Auditorium, Chariali Namghar and Digboi Kalibari. In Digboi for amusement there are 2(two) beautiful parks : 1(one) is the Centenary Park and the other one is Digboi park. Digboi centenary Museum situated in AOD area is one of the rare kinds of museum throughout India which

speaks itself the history of colonial rule in India. A community hall situated at DTC campus. In Digboi Masterplan Area the existing land use for recreational purposes is 34.86 hectares. In this plan the proposed Land use for recreation purposes increase to 42.58 hectare keeping in mind the increase of population up to the year 2041. The land utilization rate for recreation purposes will be 0.64 hectare per 1(one) thousand population in the Masterplan Area.





## **CHAPTER - 7**

### **7. ENVIRONMENT, TOURISM AND CITY BEAUTIFICATION PLAN**

#### **7.1 Description of eco-friendly areas –**

There are mainly seven eco-friendly/heritage sites in Digboi which became the pride of Digboi.

The small town of Digboi in the north eastern region of the country is the birth place of the oil industry in India. Digboi refinery commissioned on 11<sup>th</sup> December 1901 is India's oldest operating refinery and one of the oldest operating refineries in the world. The historic Digboi refinery has been term as the "Gangotri of Indian Hydrocarbon sector". Earlier owned an operator by the Assam Oil Company Limited/Burmah Oil Company, It came into the domain of Indian Oil Corporation Limited by an Act of parliament on 14<sup>th</sup> October, 1981 and became the Assam Oil Division of Indian Oil Corporation Limited. Today Assam Oil Division prides in having some flagship CSR project namely IOCL (AOD) hospital, Assam Oil School of Nursing, ShikshakDakshyata Vikash Abhiyan among many other regular socially committed initiatives.



Digboi War Cemetery is a cruel reminder of the effects of war. In the War Cemetery, rest the souls of warriors who lost their lives during Second World War braving the attack of Japanese. The Cemetery was initially on hill top and subsequent to an earthquake that destructed the cemetery, it was shifted to the present location. In the cemetery there are 191 identified burials and a few unidentified ones mostly British and Indian soldiers.



The oil heritage of Digboi has been carefully preserved at the Digboi Centenary Museum suitably located around India's first oil well (drilled in the year 1889). This is caring for heritage project tells us the over hundred years old story of Digboi through unique exhibits, equipment's, plants and knick-knocks





Digboi Centenary Park is the most beautiful park in whole north-eastern region. Tourist visit the park for enjoying picnic as well as spend holidays.

Amidst the blue hills and the green tea gardens, the British left behind a picturesque golf course in Digboi. This Golf Course always reminds us of British colonial role in India. Digboi Golf Course is considered one of the best Golf Courses in entire north eastern region. This world class 18-hole golf course has hosted many tournaments, both national and international.



The Victorian bungalows in Digboi, more than a century old, will take us back in time to the colonial period. The unique 'Chang Bungalows' built by the

British, standing one in each hillock, surrounded by well-maintained lawns and small kitchen gardens will mesmerize us.



The region in and around Digboi is home to a variety of flora and fauna and is the pride of Assam. Sightings of many wild animals like deer, tiger and the Asian Elephants are not rare in the region. The region has also become quite a popular bird watching destination for bird watchers over the last few years.



### 7.1.1 Tourism

Tourism is a social and economic phenomenon that heavily influences contemporary society (Crick, 1996). Nowadays, tourism industry can be considered as business behaviour since it might influence the development of a local economic. The secret for a successful destination is to approach the right target market and to provide an appropriate combination of local tourism products and services. Tourism is now-a-days considered as an important industry which has vast scope for the generation of income and employment. It is one of the world's fastest growing industries, a major source of foreign exchange earner of a nation and a measure for resolving interstate and inter community conflict.

The town of Digboi is quite a colorful, vibrant but tiny location situated in the north-eastern part of India in the Upper Assam Valley.

Digboi town already known for its historic finding of first crude oil and also a destination for tourist. The tourist visits this place mainly to see the Oil field, Digboi peak, Digboi Oil Museum, War cemetery and golf course etc.





## **7.2 Plan/Measures for protection and conservation of environmentally-friendly zones.**

Being environmental friendly simply means having a lifestyle that is better for the environment. It's all about taking small steps towards mother earth so as to make this planet a better place for our communities and generations to come. A good way would be to start with conserving water, driving less, walking more, consuming less energy, buying recycled products, eating locally grown vegetables, joining environmental groups to combat air pollution, producing less waste, planting more trees and many more. The more that we do on our part the faster we will create an environment of living that promotes sustainability.

In the environmentally friendly zone, there is more than just a good recycling programme in place. People of the town who are committed to conservation and preservation of resources should encourage options like community play grounds, public transportation, green construction and work to change the way that fossil fuels and other resources are used to support community services.

This plan suggests following proposals for protection and conservation of environmental friendly zones-

- (i) People of Digboi town should join hand with environmental groups to protect the town and make the environment clean and green.
- (ii) Reduce, reuse, recycle waste hierarchy is the order of priority of actions to be taken to reduce the amount of waste generated and to improve overall waste management processes and programs.
- (iii) Plantation habit should be grown up among the people. For this necessary awareness camp should be organized by competent authority for conservation of natural resources and composting system.
- (iv) Steps should be taken by the authority to stop people from littering on roads. Instead, educate them to put trash and garbage in dustbins. The pile of garbage on road hampers the beauty of the city and also pollutes the air.
- (v) Steps should be taken by the AOD authority to reduce the emitted hazardous chemical and gases in its refining process.

## **7.3 City Beautification Plan/ Proposals-**

To improve town's appearance and aesthetic view, neighbourhood often try to update what is known as streetscape, which pertains to the area between the driving lanes and the edge of the private property. Partly this is a popular strategy

because it is public space and it's easy for the government to dictate what will happen there. In truth, streetscape can be quite effective in uniting block faces or a series of blocks that are discordant in some way, because streetscape often includes plantings, the effect is to soften the view created by streets and hopefully sidewalks. Care in the choice of materials and in the quality of the installation makes all the difference in this form of beautification.

In addition to streetscape, sometimes we need a focal point. This might be public art and open air theatre, fountains, a clock tower or grouping of tall grasses. If we already have a lonely statue or old historical building with nothing around it, maybe we should add planting beds of considerable size, an inviting bench or two, and may be an interpretive sign explaining the rest of the story. A tree planting project, either on a vacant plot, in a park, or in the parkway between the side walk and the street is great for improving towns appearance over the course of a few years at a relatively low cost. Voluntary schemes should be taken up by neighbourhood basis for cleaning up the park of the town. Project should also be taken up for cleaning the river or stream.

#### **7.4 Roadside Plantation-**

The main object of road side plantation is to provide protection to road, traffic, check soil erosion, food, fuel, fodder and timber to the society and mitigate climate change issues. Plantation is durable assets that produce fruits and raw materials for agro based industry, and also generate livelihood after 7 to 10 years.

This plan suggest the social forestry department to prepare project on road side plantation with details of road to be covered, length of road and species of plants to be planned with numbers of plants for entire Digboi master plan area.

Plantation of fruit bearing plants, suitable to local agro-climatic condition should be done in every area of the master plan. The authority concern should take steps for organizing camp and awareness program for road side plantation and educate the people about the benefits of road side plantation including its impact on city's landscape.

#### **7.5 Urban Agriculture and Urban forestry.**

Urban Agriculture is the new culture that is catching up in emerging cities. Since the population growth rate is very high, natural resource to feed the increasing population in coming days is going to be a difficult task. So, urban agriculture is seen as a big solution to the problem.

Urban forestry is the careful care and management of tree in urban settings for the purpose of improving the urban environment. Urban forestry advocates the role of trees as a critical part of the urban infrastructure. Urban forest function is thus often oriented toward human outcomes, Such as



shade, beauty and privacy. Urban forests bring many environmental and economic benefits to town. Among these are energy benefits in the form of reduced air conditioning, reduced heating by shading buildings, homes and roads, absorbing sunlight, reducing ultraviolet light, cooling the air and reducing wind speed.

So, urban forestry scheme should be taken by competent authority for afforesting degraded forest land in the Digboi master plan area. This type of scheme will act against climate change by creating a carbon sink and against air pollution in the town. This plan also suggests for starting tree surveys in the town which can be conducted by NGO and college or school students. A plan should be framed to create small nurseries in Govt. school as well as in private institution where there is extra space.

## **7.6 Public Rain Water Harvesting Scheme**

Rainwater harvesting is a process involving collection and storage of rain water that runs off natural or man-made catchment areas, e.g. roof top, Compounds, rock surface or hill slopes or artificial repaired impervious/semi-pervious land surface.

Due to deforestation and the consequent ecological imbalance, the ground water level is going down day by day. The constant rising demand of water supply especially from the urban areas does not match with the surface water sources, as a result of which the water reserves beneath the ground level are over exploited. This consequently results in the water level depletion.

Water harvesting apart from recharging the ground water level, increases the availability of water at a given place at a given point of time. It also reduces the power consumption. It further reduces the run off which chokes the storm water drains, artificial flooding, chances of soil erosion and improves the quality of water. The plan suggests rain water harvesting scheme to be implemented by a competent authority. Moreover, the urbanization trend reduces the infiltration rate of rain water into the sub-soil thereby reduces ground water recharging.

### **7.6.1 Development of Parks and Recreation Spaces-**

The Plan recommends 42.58 hectare of land for recreational purposes. The plan envisages a Town hall to meet the social and cultural needs of the town and also recommends modernizing the existing play ground with adequate infrastructure. The plan also proposes an indoor stadium at Padma Nath Gohain Barua Road, Ward No-8 and a small size children parks at each neighbourhood area and in composite zones.

**7.6.2 URDPFI Guideline for Parks and Recreation Spaces**

The provision of socio- cultural facilities shall correspond to the changing urban demography and work life style.

**TABLENO:-31****NORMS FOR SOCIO- CULTURAL FACILITIES**

<b>Sl.No</b>	<b>Category</b>	<b>Pop. Served per unit</b>	<b>Land Area Requirement (Sq.m)</b>
<b>1</b>	Aganwadi- Housing area / Cluster	5000	200-300
<b>2</b>	Community Room	5000	750
<b>3</b>	Community hall / Marriage hall/ Library	15000	2000
<b>4</b>	Music, dance and drama centre	1 Lakh	1000

**TABLENO:-32****NORMS FOR RECREATIONAL FACILITIES**

<b>Sl.No</b>	<b>Category</b>	<b>Population Served per unit</b>	<b>Area Requirement (Ha)</b>
<b>1</b>	Housing Area Park	5000	0.50
<b>2</b>	Neighborhood Park	15000	1.00
<b>3</b>	Community Park	1 Lakh	5.00

**TABLENO:-33****NORMS FOR SPORTS FACILITIES**

<b>Sl.No.</b>	<b>Category</b>	<b>Population Served per unit</b>	<b>Area Requirement (Sq. M)</b>
<b>1</b>	Residential unit play Area	5000	5000
<b>2</b>	Neighborhood Play Area	15000	1.5
<b>3</b>	Town sports centre	1 Lakh	8.00

### **7.7 Beautification of Major Transit Zone**

Digboi has emerged as a major transit zone for Petroleum and its by-products mainly originating from AOD refinery. Tea of Digboi transit to all over India. So, it is very much essential to beautify and upgrade the major traffic points like bus stand, railway station, market area of this emerging transit zone of upper Assam.

### **7.8 Road Signage and Street Furniture**

Road signs are signs erected at the side of or above roads to give instruction or provide information to road users. The earliest signs were simple wooden or some milestones. But in course of time, many states of India have been adopting pictorial signs or otherwise simplified and standardized their signs to overcome language barriers and enhance traffic safety, such pictorial signs use symbols in place of words.

Street furniture is a collective term for objects and pieces of equipment installed on streets and roads for various purposes. It included Benches, traffic barriers, bollards, post boxes, phone boxes, street lamps, traffic lights, traffic signs, bus stops, taxi stand, public lavatories, fountains, public sculptures and waste receptacles. An important consideration in the design of street furniture is how it affects road safety.

In Digboi Masterplan Area existing road signs and furniture are inadequate for increasing traffic and those are not also scientifically designed.

So, the plan suggests to authority concern to take steps for the installation of warning, priority, prohibitory, mandatory, information, facilities, service, direction, position and indication signs in the roads of Digboi town, so that local people as well as outsiders can be benefitted and road safety can be maintained.

In Digboi Masterplan area presently there is no street furniture necessary for the public. The concerned authority should take steps for the construction of public lavatories at important public places and installation of benches in the park and public places, post boxes, bus stop, taxi stand, waste collectors etc.

This plan recommends for preparation and execution of a city beautification plan covering street light, traffic signal etc. that will enhance the beauty of this resource full town.

### **7.9 Tourism Issues**

Digboi town and its suburbs have immense potential and scope for the tourism industry. Digboi is best known for oil & natural gas rich region along with unique natural beauty with flora and fauna & cultural festivals. The various places of

visit can be nature related, religious, historical etc. Some of the problems of tourism in Digboi include proper signage's, tourist facilities, etc.

## **7.10 Tourism Potential**

### **Capacity Building**

- Selected villages should be given assistance for showcasing of handlooms and handicrafts to help the villagers sell their products.
- If necessary, we can have these exhibition centres for a group of villages also. These will help to sustain the crafts as these activities will help generate income for the villagers.
- Local youths can be trained to become tourist guides. They already have adequate knowledge about the places; they just need to be trained to enhance their soft skills so that they are in a better position to interact with the tourists.
- To develop a proper website, that enables to give enough information to domestic and foreign tourists.

### **Draft Proposal for Cultural hub cum park**

- One cultural hub cum park could be developed where the art of the different community people can be placed, and the place should be designed in such a way that it should be environmentally friendly.
- One side of the hub can be used to exhibit their traditional ornaments, dresses and food so that tourist can also enjoy their culture and tradition.
- The other side can be used for recreational which includes landscape and sculptures.
- The facilities like parking, drinking water and toilets should be provided inside the park.



**CHAPTER -8****8. LAND USE PLAN****8.1 Developable and Non – Developable Area of the Masterplan**

Urban growth and development is often conditioned by the natural landscape like hills, water bodies, forests and manmade impediments like railway line, major roads & canals etc. It is also conditioned by the resources and technology employed in overcoming the impediments and constraints.

Existing Digboi Masterplan covers both flat and hilly land. Except upper Dihing forest within the industrial area, there is no other physical feature acting as a constraint for development. The soil is very fertile and good vegetation and tea garden is observed in the region.

The quality of urban life and its functional efficiencies are governed by its land-use pattern. In order to understand and analyse systematically the functional relationship between various uses particularly the place of living, business place, industrial activity, education, recreation, agricultural activity etc., a detail land-use survey was conducted during the year 2016-17 and analysed up to the year 2018 to estimate the present and future need of the urban area as well as masterplan area. Digboi masterplan covers an area of 2613.47 hectare (26.13 sq.km.), out of which developed area is 1763.89 hectare (17.63 sq.km.) i.e. 67.48 % of the total plan area and non-developed area is 849.58 hectare (8.49 sq.km.) i.e. 32.52 % of the total plan area.



## 8.2 Existing Land Use

The existing land use and the areas occupied by each use in Digboi masterplanarea is shown in the following table:-

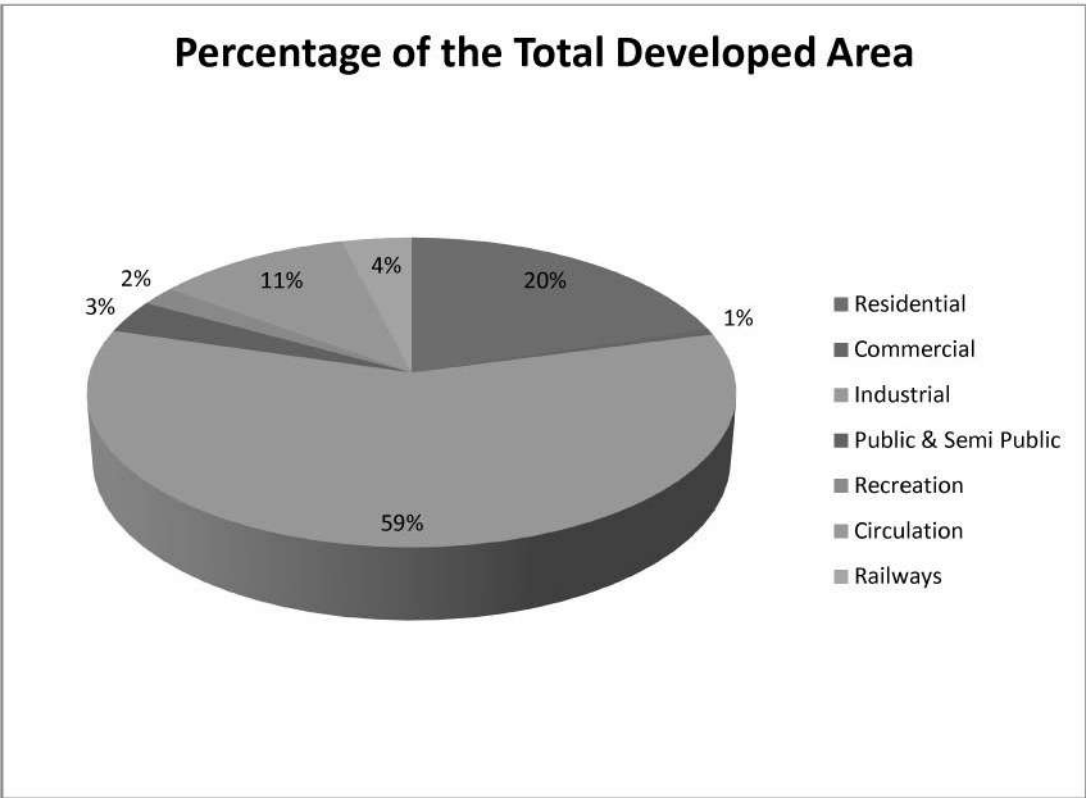
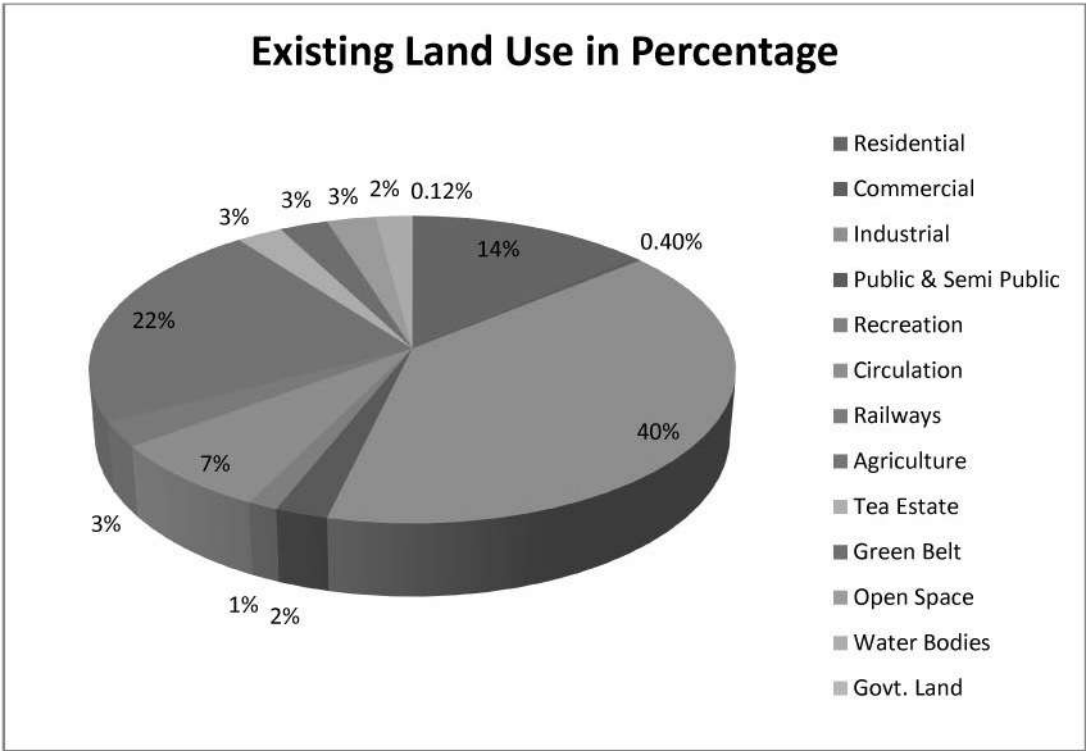
**TABLE NO-34**

**EXISTING LAND USE - DIGBOI MASTERPLANAREA IN 2017.**

Use	Digboi MasterplanArea in hectare	Percentage of the Digboi MasterplanArea (%)	Percentage of the total developed Area (%)
1	2	3	4
<b>Residential</b>	356.79	13.65	20.22
<b>Commercial</b>	10.54	0.40	0.60
<b>Industrial</b>	1036.50	39.66	58.76
<b>Public &amp; Semi Public</b>	60.96	2.33	3.46
<b>Recreation</b>	34.86	1.33	1.98
<b>Circulation</b>	194.66	7.45	11.04
<b>Railways</b>	69.58	2.66	3.94
<b>Total developed area</b>	<b>1763.89</b>	<b>67.48</b>	<b>100.00</b>
<b>Agriculture</b>	581.31	22.25	--
<b>Tea Estate</b>	68.66	2.63	--
<b>Green Belt</b>	72.24	2.76	--
<b>Open Space</b>	72.68	2.78	--
<b>Water Bodies</b>	51.60	1.98	--
<b>Govt. Land</b>	3.09	0.12	--
<b>Total Un Developed Area</b>	<b>849.58</b>	<b>32.52</b>	
<b>Grand Total PlanArea</b>	<b>2613.47</b>	<b>100.00</b>	

Source: - Town & Country Planning, Dibrugarh Land Use Survey 2017.

Figure-22





In Digboi MasterplanArea, 356.79 hectare of land (20.22% of total developed area land), is use for residential purposes, excluding the land use for residential purposes in Digboi oil town. Land use for residential purposes in Digboi oil town has been shown as industrial area land in the land use map. New residential areas have been developed in the last few years at no. 2 & 3 Borbill Gaon, no. 1 & 2 Gulai Gaon and at no. 2 Bapapung Gaon.

In DMPA, 10.54 hectare of land is used for commercial and business purposes. The business area in Digboi spread over both side of NH-38 from north to south up to Digboi tiniali point and along the road side of Digboi Pengeri road. Vegetable, grocery and food market located in compact manner at Digboi tiniali point. Digboi new market in located within the industrial area. The roads being narrow, no provision of parking area in market places and on road parking of all types of vehicles including commercial vehicles at Digboi tiniali point create traffic congestion in the area. In the recent years some business activity is going day by day along NH-38 in Gulai area.

In the map of India, Digboi occupy the place of industrial town and this has been proved in the Masterplan of Digboi because industrial areas occupy 1036.50 hectare of land, i.e. 39.66% of total MasterplanArea.

The land use for Public and Semi-public purposes including educational institutions, government offices, health care etc. are 60.96 hectare, which is 3.46 hectare of total developed area land of the Masterplan. The land uses under this had is scattered all over the MasterplanArea.

In DMPA, 34.86 hectare of land (1.98% of total developed land) is used for recreational purposes. Out of this a major portion has been used as golf course. Besides there are three fields for outdoor games, tennis court, indoor stadium, swimming pool, Centenary Park and various other open spaces fulfil the recreational activity of the people of Digboi.

Transportation & circulation network of a town or planning area plays an important role and affects immensely the economic and socio cultural life of the planning area. A well-developed road network can provide answer to many problems of urban life. Accordingly in DMPA, the land use for circulation purposes is 194.66 hectare, which constitutes 10.04% of the developed land.

Railways occupy an area of 69.58 hectare of land (3.94% of the total developed land). The railway track is passing all along through the MasterplanArea from no.3 Borbill Gaon to no.2 Gulai Gaon. The railway station is situated within the industrial area.

In DMP, a green belt covers an area of 72.24 hectare (2.76% of the MasterplanArea) of land. there are 3 (three) green belt block within the Masterplan, one block is situated in the west of Masterplan at left side of Digboi-Duliajan road, another in the east of Masterplan at right side of Digboi-Pengeri road and the last one situated between DPS and Golf course. Open space constitute an area of 72.68 hectare (2.78% of the MasterplanArea) of land. Small size open space area scattered all over the Masterplan and one big block of open space has been seen in the north of Masterplan at no.1 Borbill Gaon on both side of proposed bypass. Water bodies constitute an area of 51.60 hectare (1.98% of the Masterplan) of land. Govt. land constitutes an area of 3.09 hectare (0.12% of the MasterplanArea) of land.

Land use planning has a bearing on the expansion of the town and put pressure on outer growth area and in rural areas. A change in urban economic function changes its population growth.

[illegible]

The proposed Digboi Masterplan covers an area of 2613.47 hectare (26.13 sq.km.), out of which about 1907.83 hectare (72.99%)of land is proposed to be developed up to the year 2041 for a projected population of 66486 persons.

The following table shows the proposed distribution of land use in Digboi MasterplanArea up to 2041.

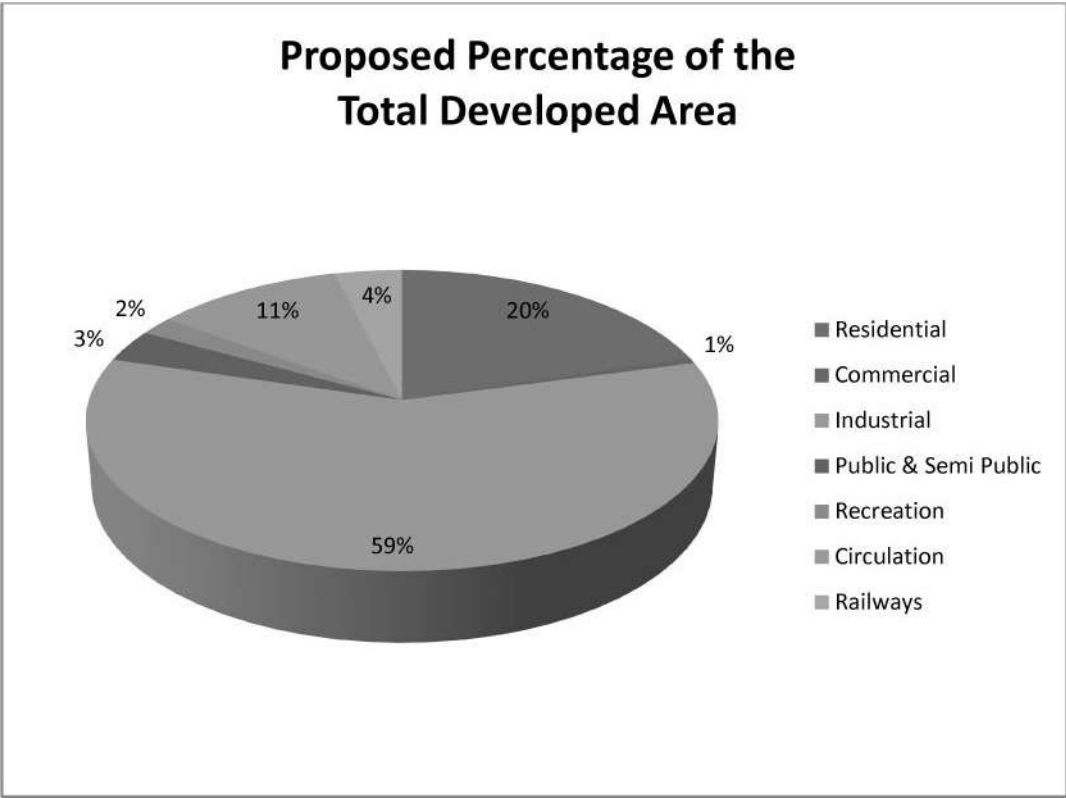
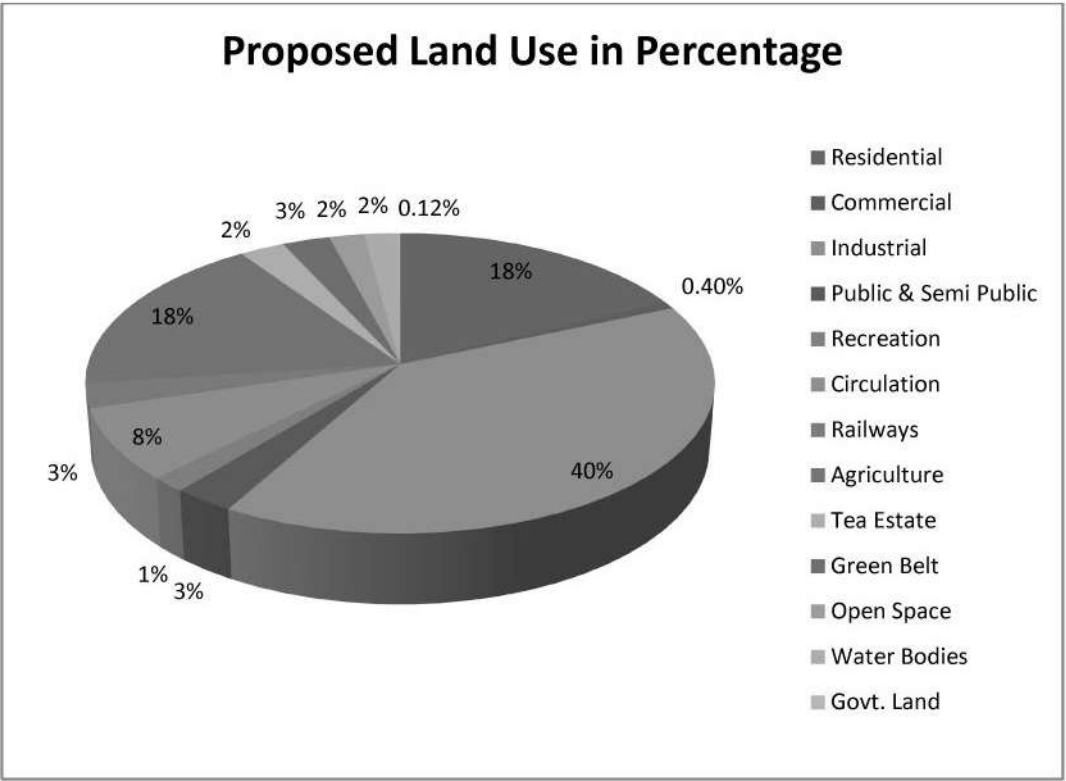
**TABLE NO-35**

**PROPOSED LAND USE - DIGBOI MASTERPLANAREA UP TO 2041.**

Use	Digboi MasterplanArea in hectare	Percentage of the Digboi MasterplanArea (%)	Percentage of the total developed Area (%)
1	2	3	4
<b>Residential</b>	462.05	17.68	24.22
<b>Commercial</b>	20.69	0.79	1.08
<b>Industrial</b>	1036.50	39.66	54.33
<b>Public &amp; Semi Public</b>	73.75	2.82	3.87
<b>Recreation</b>	42.58	1.63	2.23
<b>Circulation</b>	202.68	7.75	10.62
<b>Railways</b>	69.58	2.66	3.65
<b>Total developed area</b>	<b>1907.83</b>	<b>72.99</b>	<b>100.00</b>
<b>Agriculture</b>	457.41	17.50	--
<b>Tea Estate</b>	68.66	2.63	--
<b>Green Belt</b>	72.24	2.76	--
<b>Open Space</b>	52.64	2.02	--
<b>Water Bodies</b>	51.60	1.98	--
<b>Govt. Land</b>	3.09	0.12	--
<b>Total Un Developed Area</b>	<b>705.64</b>	<b>27.01</b>	--
<b>Grand Total PlanArea</b>	<b>2613.47</b>	<b>100.00</b>	--

Source: - Town & Country Planning, Dibrugarh Land Use Survey 2017.

Figure-23



An area of 462.05 hectare or 17.68% of the total masterplanarea has been earmarked for residential use for projected population of 53494 persons of Digboi Municipal Board and ruralareas up to the year 2041. It is presumed that a part of the total projected population will be residing in the mixed used areas. In the plan a RLDS scheme has been proposed at no.2 Gulai Gaon. In the proposed land use plan, the population density of the masterplanarea in the year 2041 will be 25.44 persons per hectare or 2544 person's per sq.km. The residential density of Digboi Municipal Board area and ruralarea for the year 2041 will be 115.77 persons per hectare or 11578 persons per sq.km. The following gross residential density is recommended in the plan:-

1. Low density : up to 50 persons per hectare
2. Medium density : 50 - 120 persons per hectare
3. High density : 120 - 200 persons per hectare

Land earmarked for commercial activities is 20.69 hectare besides AOD market within the industrial area. In the plan new commercial activities has been proposed along road side of NH 38 at no.1 Borbill gaon, along the Digboi-Pengeri road, along NH 38 at no.1 Gulai gaon and along the road of Digboi-Duliajan road. In the plan a ware house has been proposed at no.2 Gulai gaon.

The land occupied by AOD is more than 1000.00 hectare and which is earmarked in the plan as an industrial area. Within the industrial area AOD refinery, office complex, housing colony, market complex, health care facilities, park and sports fields are situated. A large portion of land in the Northern part of the industrial area is a hilly terrain with the existence of dense forest. In the plan Solid Waste Management site has been proposed at Borbill No.1 near proposed bypass covering an area of 24.74 hectare.

In the proposed land use plan, the land earmarked for circulation is 202.68 hectare. In the plan new roads has been proposed to link up the sub-arterial and other road to arterial road. Besides for the efficiency of circulation pattern taxi stand and truck terminus has also been proposed in the plan.

In the plan the land earmarked for Public and Semi-public activities increases to 73.75 hectare for establishing Govt. offices and education institution for the growing population. In the same way to meet the demand of growing population, the area earmarked for recreation facilities has also been increased to 42.58 hectare for establishing parks and indoor game facilities.

**8.4 Composite Zones or Mixed Zones:**

With increased urbanization, the demand for housing increased manifold. As such, this plan proposes a Residential Land Development Scheme at no.2 Gulai Gaon covering an area of 17.00 hectare to accommodate 1500 persons or 300 households. The development of this new residential area should be done on the basis of micro/block level planning where all urban problems will be mitigated. The block will covered by small play field with parks for providing recreational facilities to the children of the block. Other facilities included in the scheme are such as 24 hour's electricity and water supply well equipped drainage facilities neighborhood shopping centre, first aid facilities and provision of kindergarten school.

The land used for administrative purposes within Digboi Municipal Board area is deficient. The existing land area of School and Colleges are also for behind the norms. So, this plan suggest to Authority concern to set up an Administrative Block at a suitable available Govt. land within the town committee area for the centralization of administrative works, so that people's harassment reduce to some extent. In the same way this plan also suggests to increase the land area of school and colleges to reduce the utilization rate by allowing mixed growth.



## **CHAPTER- 9**

### **9. PROPOSED PROJECT, BRIEF AND TENTATIVE FUNDING SOURCE**

#### **9.1 Identify Priority Sectors and Project**

The plan proposals for Digboi Masterplan Area spread up to 2041. It is quite obvious that the natural development will continue and the private developers will play an important role in this respect. As such, the private development is encouraged in conformity with the Masterplan. It is strongly recommended to stop unplanned and sporadic developments but to encourage balance planned and sustainable development where the provision for necessary physical infrastructure and socio-economic amenities are economically made possible. There are some immediate necessities as pointed out by the various stake holders, which are to be taken up as priority schemes for the Masterplan Area which is listed below:

1. Widening and improvement of roads, with street lights and demarcation of notified parking area.
2. Improvement of existing market situated at Digboi tiniali into a well-planned, people friendly business hub.
3. Construction of a Tourist lodge and a Marriage hall.
4. Construction of a Town Hall & old age home.
5. Development of Housing Colony for all sections of the Society considering the scenic beauty of the town.
6. Construction of Slaughter house.
7. Improvement of existing traffic signal points and setting up new ones.
8. Setting up of Organic farming industry.
9. Setting up of Micro Small and Medium Enterprises (MSME).
10. Improvement of existing Bus station.
11. Scheme for Slum area up gradation and relocation.
12. Construction of Vendor and Hawker market.
13. Construction of public bus stand and truck stand.
14. Construction of Auditorium and library.
15. Improvement of existing hospital and dispensaries.
16. Construction of cold storage, ware house etc.
17. Development and Construction of playground and Indoor stadium.
18. System of regular collection and disposal of garbage in the masterplan area by the concerned authority.
19. Scheme for Solid waste Management system as per waste management Rule, 2016.
20. Preparation and execution of a comprehensive drainage scheme.
21. Execution of Residential Land Development Scheme.
22. Water supply scheme
23. Proposal for fuel filling station and LPG go down.



#### 24. Proposal for Freight Zones & Logistic

In the first phase, the schemes like widening and improvement of roads, construction of new roads, scheme for slum area up-gradation and relocation, provision for required spaces for parks, playgrounds and parking places and improvement of commercial and market areas including existing market, daily bazaar etc. can be taken up. The Town Committee has to play an important role visioning with other Govt. agencies in formulation and execution of such schemes in the masterplan area. All the above schemes need to be carried out to make the plan area into a healthy place of living.

In addition to the above, the plan also recommends for the establishment of health centres, construction of administrative block for all Govt. offices under one roof.

### 9.2 Fund Requirement for each Sector/ Project

Fund requirement for each sector project will be finalized by the ULB and concerned line departments after preparation of detailed project report as per Govt. instruction.

### 9.3 Identify Land Site for Proposal

The plan finds the following sites are suitable for taking up the proposals in accordance with the existing trends of growth as well as for balanced development.

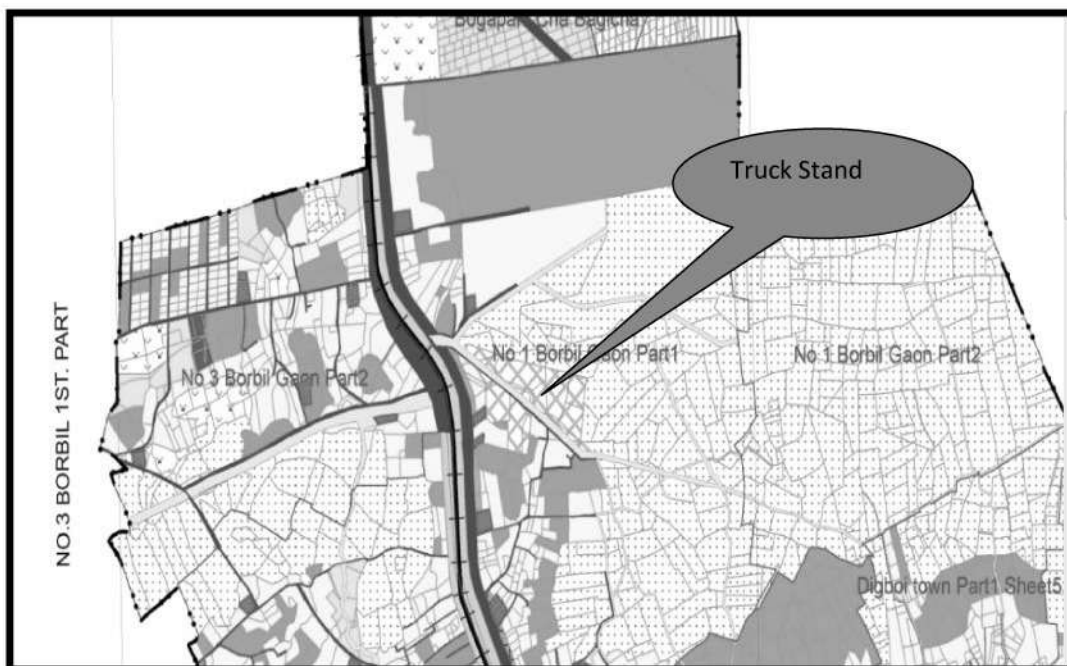
( 1 ) Town Hall : Opposite of Janata Vidyalaya, ward No.-8



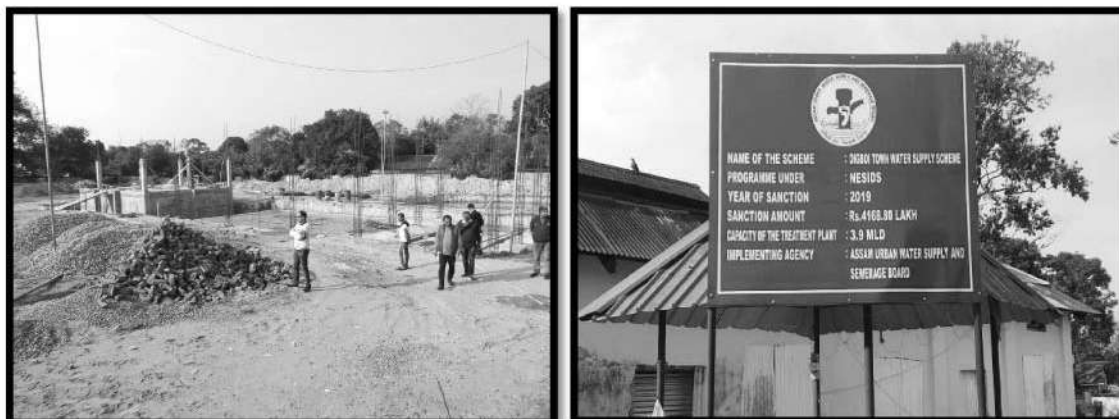
- ( 2 ) Development of Parking area : Near Bus stand
- ( 3 ) Auditorium and Marriage Hall : At Moliabari
- ( 4 ) Library : Near Digboi Club
- ( 5 ) Indoor Stadium : At Padma Nath Gohain Barua road, ward No-8



- ( 6 ) Truck Stand : At No.1 Borbilgaon



## ( 7 ) Water Supply Scheme : At Kalibari area Ward No-2



## ( 8 ) Solid Waste Management System :-At No.5 Golai adjacent to DMPA.



## ( 9 ) Residential Land Development Scheme :- At No. 2 Gulai Gaon

## ( 10 ) Oil filling station : At No.1 Borbill &amp; No.2 Golai

## ( 11 ) Old age home : At abandoned AOC area

## ( 12 ) LPG godown :- At No.2 Golai

## ( 13 ) Tourist lodge :- As per the convenience of concerned authority.

## ( 14 ) Cycle track :- At Digboi Pengeri Road (near War Cemetery)

**9.4 Indicative Sources Of Fund**

The ULB and concerned line departments will submit the DPR's to their respective departments for sanctioning fund from State & Central Government under various schemes like NLCPR, NEC, 10% pool, Jal Jeevan Mission fund etc. The ULB's can also adopt the policy of Private Public Partnership (PPP) mode for raising the fund for a few remunerative projects.

## **CHAPTER- 10**

### **10 DISASTER PLAN**

#### **10.1 Hazards Specific Proneness in Digboi:**

➤ **Earthquake :-**

As per the latest seismic zoning map of India, the Digboimasterplan falls under High Risk Zone- V, where a maximum intensity of IX can be expected.

➤ **Flood : -**

Even Digboi town is also facing urban flooding in many localities due to lack of proper drainage system.

➤ **Soil Erosion : -**

The soil erosion is major threat to many areas due to the high undercurrent of river Kundli

➤ **Fires : -**

The fire takes places in Digboi due to short circuit in commercial areas, thatched house. Mainly fire takes place from March to April when the climate remains very dry. The district also prone to industrial disaster due to the presence of coal fields in an around Digboi.

➤ **Cyclone:-**

In Digboi cases related to low density cyclone occurred in some places.

#### **10.2 Need for Disaster Management**

Data on disaster occurrence, its effect upon people and its cost to countries, are primary inputs to analyze the temporal and geographical trends in disaster impact. Disaster losses, provide the basis for identifying where, and to what extent, the potentially negative outcomes embedded in the concept of risk is realized. They help to understand where, and to whom, disaster risk becomes impact. They also provide the basis for risk assessment processes, a departing point for the application of disaster reduction measures.

Development cannot be sustainable unless disaster mitigation is built into development process. Investments in mitigation are more cost effective than expenditure on relief and rehabilitation. Prevention and mitigation contribute to lasting improvement in safety and are essential to the integrated disaster management system. Disaster response alone is not sufficient as it yields only temporary results at a very high cost. So, emphasis must be on Disaster prevention, mitigation and preparedness, which help in achieving objectivity of vulnerability reduction.

As per Section 40 of Disaster Management Act, 2005 that every department of the State Government shall prepare a Disaster Management Plan.

### **10.3 Importance of Putting Disaster Management Plans in Place**

Disasters are events that have a huge impact on humans and/or the environment. Disasters require Government intervention. They are not always unpredictable. Floods take place in valleys and flood plains, droughts in areas with unstable and low rainfall, and oil spills happen in shipping lanes. This predictability provides opportunities to plan for, prevent and to lessen the impact of disasters.

Disasters arise from both natural and human causes, and the responses needed could stretch community and government capacity to the limit. Disasters are inevitable although we do not always know when and where they will happen. But their worst effects can be partially or completely prevented by preparation, early warning, and swift, decisive responses.

Disaster management aims to reduce the occurrence of disasters and to reduce the impact of those that cannot be prevented. The Government White paper and Act on Disaster Management define the roles of Local Authorities as well as Provincial and National government in disaster management.

North East Region has been vulnerable to many natural and manmade disasters in the past. We can notice that most of the disasters have occurred within the last two decades, and the frequency, intensity and magnitude of the disasters are ever increasing.

### **10.4 Plan Objectives**

The objectives of the Disaster Management Plan are:

- Disaster management in the routine affairs of the office
- To provide technical and humanitarian assistance during disaster
- Prompt and effective discharge of office responsibilities during disaster situations
- Ensuring safety of office infrastructure, human resource and other assets
- Ensuring safety of the beneficiaries and others
- Speedy restoration after disaster impact
- To conduct trainings and capacity building for effective prevention, mitigation and response for disasters.
- To undertake information, education and communication activities to create awareness among the communities and the general public.

### 10.5 Likely Geographical Extent and Magnitude / Severity

- 1) The Masterplan area is situated on both flat land and hilly areas. The municipal board area and rural area is mainly situated on flat land. Oil township area is situated on both flat and hilly areas. Hence, Digboi is severely prone to flood. Moreover, some parts of Digboi town is located in very low lying area with poor drainage system with unplanned development, so there are every chances of flash flood due to heavy rainfall. Such flash floods have been experienced during last five years.
- 2) Assam as a whole is within the Zone V of earthquake zone. Especially Digboi has witnessed a devastating earthquake in 1950. So, it can be said that geographically and geologically Digboi is situated in a very hazards prone zone.
- 3) Chances of Landslide are comparatively less in this region. But fire can broke out in the congested residential and commercial areas, market of the town anytime during lean season, even then there is every possibility to have big fire or leakage of hazardous gases from refinery. So is the risk of epidemic in the slum/basti areas. The region has faced cyclones several times in the past. Road accident, rail accident, collapse of multi-storied buildings etc. can occur at any time. Ofcourse riot is not so common in this region.

### 10.6 Disaster Management Cycle

In multi-hazard response plan, the disaster management cycle has a significant role to play. The four stages of disaster cycle have their own importance in terms of their implementation during, after and before the occurrence of any disaster.

#### Pre disaster activities

1. Policy development and National, State, district, local level disaster organization formation
2. Vulnerability and capacity assessment.
3. Prevention and mitigation
4. Preparedness, planning and training

#### Pre disaster activities

1. Policy development and National, State, district, local level disaster organization formation
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**During Emergency activities**

1. Warning (beginning before the actual event)
2. Evacuation, search and rescue
3. Emergency assistance (relief) – food, water, shelter, medical aid

**Post disaster activities**

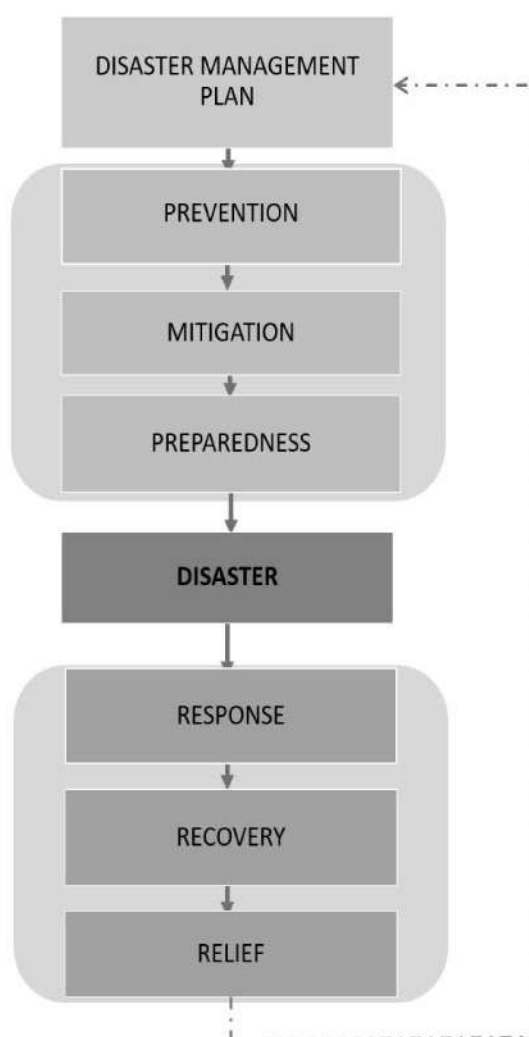
1. Repair and restoration of life lines (power, telecommunications, water transportation)
2. Reconstruction and rehabilitation.

**10.7 Formation of Digboi Disaster Management Cell (DDMC)**

So, the Masterplan recommends for formation of a Digboi Disaster Management Cell (DDMA) in the office of Digboi municipality, as per Section 40 of Disaster Management Act, 2005.

The DDMA has to be constituted with the following functionaries are Chairperson (Chairman), Vice Chairman (Co-Chairperson), Chief Executive office (Executive Office), Members (SDOI, Health, Roads, Building, Industries (Coal) and other relevant department), Nodal Officer (Jr. Engineer).

The DDMA will give emphasis towards the preparation of Digboi Disaster Management Plan. The plan also recommends that the DDMA cell to co-ordinate during emergency with the District Disaster Management Authority (DDMA) located at the Head-Quarter of the District. The DDMA Cell will





provide all the available resources and manpower for Disaster Management. This Cell will mobilize the service of technical personnel for the damage survey work to help the District Administration.

The DDMA must meet at least once in six months i.e. in the month of March and September before the Disaster Season (Flood & Cyclone) of Digboi town under the chairmanship of the Chairman, Digboi municipal board & to update the plan. For this one month's prior notice should be given to all concerned departments before convening the meeting. Chairman should review the work of DDMA. An emergency meeting will hold whenever information is received regarding calamity.

### **10.8 Standard Operation Procedure (SOP)**

The Masterplan recommends the DDMA for formulation of Standard Operation Procedure (SOP) for automatic response of the members during disaster.

- Written guideline that precisely defines how operations are to be carried out.
- An organizational directive that establishes a standard course of action.
- Written guidelines that explain what is expected and required of the personnel.
- Standardization of activities :-
  - Identify planned and agreed upon roles & actions.
  - Promotes coordination and communication amongst personnel.
  - Simplify decision making during potentially stressful conditions.

Proper implementation of Assam Notified Urban Area Building Rules – 2014 (ANUABR) & Sensitization among stakeholders engaged for construction work / owners to use disaster resistant technologies

### **10.9 Rainwater Harvesting**

Digboi Zone has experienced heavy rainfall during summer season due to the tropical monsoon in the region. So, the plan recommends adoption of rainwater harvesting system in construction activities that will reduce the volume of artificial floods in the Masterplan Area and also help to maintain the ground water level.

**10.10 Do's & Don'ts during****a) EARTHQUAKE****b) FIRE**

END

**ANNEXURE-I**

**TABLE NO-36**  
**Actionable points for various line departments**

Sl. No.	Name of line Department/Agency/	Proposal	Action to be under taken towards implementi ng proposal
<b>1</b>	DigboiMunicipal Board	a) Slum Area Development &Affordable Housing Scheme b) Solid Waste Management c) Construction of vendor & Hawker Market d) Construction of Tourist Lodge e) Bus Stand & Parking	Line department shall prepare concept paper / DPR whichever is applicable as per directive of the government for consideration of funding under 10% pool fund, NLCPR, NEC, State Finance Commission, CSR Fund & Pvt. Sector etc. in a phased manner but during the Masterplan period i.e. up to 2041. A few selected schemes like housing colony can be consider under PPP mode.
<b>2</b>	Public Works Department &DigboiMunicipal Board	a) Footpath & cycle Track b) Road signage in roads and in accident prone area c) Road Signage & Street Furniture	
<b>3</b>	ASEB &DigboiMunicipal Board	Improvement of street lighting	
<b>4</b>	Public Administration and DigboiMunicipal Board	Construction of Auditorium & Library	
<b>5</b>	Public Works Department	Widening of Road	
<b>6</b>	DigboiMunicipal Board and Town & Country Planning Assam	Development of Drainage system	
<b>7</b>	DigboiMunicipal Board and Public Health Engg. Department	Improvement of sanitation	

<b>8</b>	PHE Department & Assam Urban Water Supply and Sewerage Board	Water Supply Scheme	
<b>9</b>	Education Department, NGO and Private Agency	Education Facilities	
<b>10</b>	Health Department, NGO and Private Agency	Health Care Facilities	
<b>11</b>	Sports & Youth Welfare Department & Sports Association	Development of playground and construction of stadium	
<b>12</b>	Social Forestry, DigboiMunicipal Board, Public Administration and NGO	Protection & Conservation of environmentally friendly zone	
<b>13</b>	Social Forestry Department	Roadside Plantation&Urban afforestation	
<b>14</b>	Agriculture	Urban Agriculture & Organic farming	
<b>15</b>	Water Resource Department& Pollution Control Board	River front development& River Centric Planning	
<b>16</b>	Transport & Railway Department	Transit Zone	
<b>17</b>	Tourism Department and NGO	Development of tourist spot and cultural hub cum park.	

